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# THE EDUCATION OF THE SCIENTIST*

BY

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Although it is a pleasure and an honour to be asked to speak to doctors on the education of the scientist, it is a pleasure mingled with a good deal of misgiving. First there is the perennial problem, that even the great Wilfred Trotter left unsolved, of whether medicine itself is an art or a science. Secondly, there is the fact that must always daunt any schoolmaster, that education is a subject on which everyone is apparently an expert, and on which everyone feels entitled to express an opinion based on his own schooldays thirty years before.

Nevertheless, I am encouraged by the importance of the subject itself. There is no field of education to which it is more worth devoting thought than that of the place of science. This is true because the actual proportion of our ablest pupils who specialize in science has increased considerably over the past few years, and undoubtedly will go on increasing still further. It is also very important to take account of the fact that as a greater proportion of our national ability is devoted to science it will be increasingly necessary to recruit our administrators and executives from those trained in science rather than the arts, as in the past, and their education thus assumes an ever greater significance.

### Rapid Growth of Knowledge

In discussing the education of the scientist it is necessary to remind ourselves from time to time what a comparatively recent problem this presents. It is only a century since the then headmaster of Winchester told the Clarendon Commission on the public schools how impossible it was that scientific subjects should ever become a regular part of the time-table. Since then, and particularly in the last twenty years, we have seen an astonishingly rapid growth, so rapid indeed that nearly two-thirds of our much-expanded sixth forms are studying science in some aspect. The rapidity of this change has considerable bearing on the criticisms that are often made of our scientific education. In so far as they relate, as they so often do, to the critics' own schooldays, they are concerned with a state of affairs that has passed for ever. This great change in the position of science has come about as a result of profound social and economic changes. But more than that, it has come as a result of the pressure of new knowledge.

At no time in man's history has there been a more spectacular growth of knowledge than in the natural sciences in the past half-century, and it is well that we should remind ourselves of the difficulties this has created for the educator. Compared with the task of, say, Arnold a century ago, our problems in devising a curriculum which shall be an adequate preparation for life are far more difficult. Then a curriculum whose domination by the classics was mitigated only by a little mathematics was sufficient. Now we have had to add a multiplicity of other subjects; we have to take account of the emotional and physical education of our pupils, and we have to prepare our boys and girls ultimately to contribute to the development of knowledge itself. At its deepest level the task of education may be the same, to produce rational and civilized human beings. But the meaning of civilization has broadened, and superimposed on that task is the obligation to produce some individuals who will be able to reach the frontiers of knowledge, even though with every year that passes, those frontiers are becoming more remote.

### Real Progress

Having sketched that background, let us turn to a more detailed examination of our subject. First, let us consider the education of the scientist in science. Here, I believe, we can claim real progress. The efforts of science teachers themselves, reinforced by an able and enlightened inspectorate, have encouraged real advances in the quality and quantity of science teaching. We are rapidly moving towards the position in which some science is part of the education of all suitable children from the age of 11. A weakness that is at present too common is that children often have to decide too early whether they wish to specialize in science; but even here we are making progress, and moving towards a situation in which no irrevocable decisions have to be made until 15 or 16. After that age, in the sixth form, it is, as is well known, the custom in English schools to specialize fairly intensively. No aspect of education is more freely criticized than sixth-form specialization; no educational topic is discussed more misguidedly. In fact, a reasonable degree of specialization may be defended on grounds both of educational value and of expediency.

It is good for intelligent boys and girls to devote the major part of their energies to their chosen subjects, firstly, because they like doing so. It is a frustrating waste of the energy of youth to make a clever boy learn something merely because it is not what he wants to learn. And even at the age of 17 there is virtue for the abler pupil in getting to grips with quite difficult ideas in his chosen subject. But, apart from these more

*The substance of a lecture delivered to the Manchester Medical Society on May 7, 1958.

abstract arguments, the hard fact remains that if the future scientist does not learn his physics, chemistry, and biology at school he must learn them somewhere. This delay in specialization leads to two things. It leads first to the dreariest cramming at the universities. Instead of, say, biology being taught in a leisurely and educative way, it becomes a hurdle for the jaded undergraduate. But, even more important, a condemnation of specialization at school means inevitably a prolongation of university courses. The mere expansion of knowledge will almost certainly mean a longer university life in the fairly near future. But if to this we add lower standards in the schools, then our ability to find the money, the accommodation, and, above all, the teachers required at the university level will certainly be inadequate.

It would be wrong if in what I have said so far I gave the impression that all was well with our specialist science teaching. Much needs to be done in content and in method. Courses could usefully be pruned of much useless factual material and practical work. More positively, the approach to science could be based much more on an attitude of research rather than on the passive absorption of facts. It may well be asked why we do not in fact do this. And, as with so much educational reform, the answer must be that we have not got the teachers who, in numbers or in quality, are required to make science teaching what we know that it could be. Given that limitation, the specialist teaching of science at the school level bears comparison with that in any country.

### General Education

If we turn from the education of the scientist in science to his general education we are on much more debatable ground. The "narrow" and uneducated scientist with no view beyond his specialized horizons is a stock figure of educational mythology. In our desire to produce rounded personalities do not let us fall into the heresy of regarding science as in itself narrowing or as anything less than what it is, one of the great channels by which the human spirit may be enriched. But, having said that, let us admit that the general education of the scientist is more important than the education of the arts man in science. It is more important, first, because of the increasing number of scientists; second, because of their increasing responsibilities; and, third, because of the nature of general education itself. Few educational terms are more ambiguous. The idea certainly includes a certain factual basis; it embraces a variety of interests and skills. But at its deepest level it includes also the ability to think and talk rationally about perennial problems of life and society, and to make judgments of value in a variety of fields. Such judgments can arise spontaneously from an education in humanities; they are less likely to do so from one in science alone. How, then, shall we modify the specialist education of our scientists so that we may produce the full personalities that we desire?

The problem is beset with difficulties. The method that has been often adopted in the past, and still finds its adherents, is to insist that our scientists shall study some subject unrelated to their special interest. But the mere fact that a subject is not scientific is no guarantee of its broadening effect. The requirement of Oxford and Cambridge that everyone should study elementary Latin, for example, has no broadening effect at all. If it is intended to ensure that everyone should have some acquaintance with that classical culture from which so much of our own thought springs, it is obviously ineffective compared with, say, reading some classical writers in translation. We must devote thought to the *content* of our non-specialist studies, and not to the mere fact of their being non-specialist. We must ask, "In what real way is this study at this level helping our science specialist to a fuller view of life or to more secure judgments?"

There are some who see the humanization of the scientist coming through courses in the history and philosophy of science itself. With very gifted teachers and unusually able pupils it may well be that scientific studies can themselves become the nucleus round which broader views and interests may crystallize. But it is expecting too much of the average teacher to imagine that he can bring out the implications for society and the growth of ideas of, say, a specialist course in physics. There is, I believe, no doubt that we must look to "outside subjects" to humanize our scientists, but they must be chosen with a new vision of what they may be expected to achieve, and taught by people who are interested in that particular task. The aim, I believe, must be stimulus rather than instruction. We must not be afraid of superficiality, for the specialist subjects will give the rigour of thought that is required by the student. If the teacher can so infect the pupil that he will read, or listen to music, or look at pictures *for himself*, then the battle of general education is half won.

### Role of Leisure in Education

But in order that this may happen it is necessary that both in schools and in universities we should rediscover the part played by leisure in education. There is a danger that we may so fill our pupils' lives, not only with specialist studies, not only with the process of overfrequent examining, but with general education and social activities as well, that they may never have time to read or talk or even simply to think what it is all about. This point links with another to which, I believe, we must give much thought. The English doctrine is to believe that general education should be over at school, and that the universities exist only for specialist studies. It is doubtful whether this view is tenable when so many of our students come from homes without books or intellectual traditions. Can it be maintained that by the time they leave school such students are mature enough to grapple with much that we regard as valuable elements in general education? Faced with the challenge of the kind of arts course that the scientist at the California Institute of Technology or the Massachusetts Institute of Technology enjoys, it may well be that our universities may have to consider a more positive policy in the general education of their students, not, perhaps, by formal courses, but by such devices as regular "arts tutorials."

### Conclusion

I am conscious that I have made few concrete proposals, and that I have raised more questions than I have answered. But, in fact, the problems with which we are faced when we consider what the education of the scientist should be are not to be solved by easy prescriptions. They demand bold experiment and discussion. For what we are ultimately trying to do is to take the new body of knowledge that the natural sciences are bringing, and to integrate it into the body of humane culture, to bridge the gulfs that are in danger of developing between different branches of learning, to produce scientists who are not only skilled in their own fields but also creative minds sympathetic to other branches of human endeavour. That is the measure of the task; there is none more urgent in the whole field of education.

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The *Indian Journal of Pediatrics*, the first paediatric journal to be published in India, has celebrated its silver jubilee with a special issue (vol. 25, No. 123). Dr. K. C. CHAUDHURI has edited it throughout its existence, and it is now the official organ of the Indian Pediatric Society and the Institute of Child Health, Calcutta. Starting as a quarterly publication in October, 1933, it later became a bi-monthly, and since 1956 it has appeared monthly.

# GENERAL PRACTICE AND MEDICAL EDUCATION

*We print below four articles from contributors who have been active in the work of the College of General Practitioners and of its committees. The first three discuss the undergraduate and continuing education of the general practitioner, and the fourth is the report of a working party on psychological medicine in general practice.*

## UNDERGRADUATE EDUCATION AND THE GENERAL PRACTITIONER

BY

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The Hippocratic Oath[1] binds us to look upon the sons of our teachers as our own brothers, and "to teach them this art if they shall wish to learn it." We undertake to impart a knowledge of the art to our own sons and those of our teachers, and to do this "by precept, lecture, and every other mode of instruction." It is appropriate to begin this review with a reference to Hippocrates, since those of us who have had the privilege of membership of the College of General Practitioners from its foundation, less than six years ago, can detect a new awareness of the professional ties which bind us together as family doctors.

Early fears that the creation of yet one more medical college would merely serve further to divide our profession have not been realized. Far from dividing us, the College has not only provided, in the form of an academic institution, a vehicle for the expression of our common heritage as general practitioners, but it has also enabled us to re-examine our relationships with our colleagues working in the many other branches of our profession. This in turn has led us to take the first step towards our reintegration as members of a single united profession.

Of all the spheres of interest of the College none has provided a greater stimulus to this way of thinking than the field of undergraduate education. By examining in retrospect our own training as medical students against the background of the work we have had to do since leaving our several medical schools, by meeting the medical students who have taken our places in the lecture theatres, laboratories, and clinics, and by discussing with them the present-day problems of medical education, we have developed a sense of thinking of these students as indeed our professional heirs. It may be that some of us are so overwhelmed by the magnitude and urgency of the problems encountered in general practice that we see little likelihood of our being able to solve these problems in our own lifetime. We are beginning to look to the next generation to assist us in our work, and eventually to take up themselves the challenge which we have but partially met.

There are 25 regional faculties of the College in the United Kingdom and Eire. Their boundaries have been drawn up so as to ensure that, wherever possible, the headquarters of a faculty will be alongside a university with a medical school. The board of each faculty has a standing committee dealing with undergraduate education, the aim of which is to establish close liaison between the College and this medical school. The work of these committees has been described in detail in a booklet published last month.[2] Three other publications of the College discuss our policy and aims with regard to undergraduate education, and give specific examples of the ways in which general practitioners are already assisting in the training of medical students. These are: "The Teaching of General Practice by General Practitioners,"[3] "The Medical Curriculum,"[4] and "Recommendations as to the Medical Curriculum"[5] submitted by our College to the General Medical Council.

We recognize that the training of medical students is the responsibility of medical schools, working within the broad terms of reference drawn up for them by the General Medical Council, which itself reviews every 10 years its own standing recommendations on the medical curriculum. These recommendations are purposely framed so as to encourage each school to take the initiative in experimenting with its curriculum. General practitioners can make no contribution to the training of the medical student unless they are invited by medical schools to do so.

Against this background I propose to examine the suggestion made by the General Medical Council that "it is desirable that the student should be given opportunities to learn something of the work of the general practitioner."[6] In this paper I shall pose five questions and discuss the answers to them: (1) Why is it desirable that students should be introduced to general practice? (2) At what stage in the curriculum should this occur? (3) Where should it take place? (4) How should this introduction of students to general practice be carried out? and (5) What should they be taught?

### Why Ought Students to be Introduced to General Practice?

In order to answer this question we have to examine some facets of the evolution of medicine, particularly during the past century. Those that are particularly relevant are: the growth of medicine as a scientific discipline, the evolution of specialization, the interaction between medicine and the social sciences, and the emergence of the provision of comprehensive medical care on a national scale as an integral part of the health and welfare services of the community. This represents an arbitrary isolation of some facets only of medical progress. None of these subjects can be considered on its own, since each reacts upon the other. I wish merely to underline those features of the evolution of medicine which are particularly relevant to the problem we are examining.

#### Evolution of Medicine

During the past hundred years the securing first of pathology and then of bacteriology on a sound scientific basis, the rapid growth of chemistry followed by the expansion of physiology and of our knowledge of metabolism, laid the basis for the rapid growth of medicine as an applied science. The rapid development of the basic medical sciences led first to a differentiation between the preclinical and clinical subjects taught to students. Of more importance, however, is the fact that it led to a differentiation between the preclinical and clinical teachers. This differentiation has been carried further, in that in

many medical schools those who teach the preclinical subjects are not themselves medically qualified. The demand for increased emphasis on the scientific basis of medicine is just and inexorable. It has, however, resulted in a differentiation between those who teach and those who practise medicine. This differentiation has in more recent years been carried into the clinical part of the curriculum. The necessity to present the detailed scientific basis of clinical diagnosis and treatment has brought about the tendency to divorce the academic from the practical. One of the inevitable consequences of a rapid growth of knowledge is the evolution of specialization. It is relevant to examine here some of the by-products of specialization in so far as they have a bearing on medical teaching.

### Specialization

The teaching hospitals and research institutes associated with our medical schools provided the focus and took the initiative in the advancement of medicine as a scientific discipline, and in consequence it is in our medical schools that we find the most extreme forms of specialization. The general physician has practically disappeared from the clinical teaching staff. More and more our medical students during the years of their clinical instruction are being introduced not only to the techniques but also to the analytical approach of the specialist. The specialist tackles the problem presented to him in the laboratory or in the clinic from the point of view of scientific analysis. By breaking down the problem to its component parts, and by further analysis, the specialist proceeds to a solution of the diagnostic dilemma or the advancement of his researches. It is in this atmosphere that the student is conditioned for his lifetime's work, whether that should lie in the hospital, in general practice, or in any other medical sphere.

In contradistinction to this analytic approach of the specialist, the actual practice of medicine—that is, the process involved in the doctor–patient relationship—calls for an approach which is one of synthesis. The doctor may well begin with an analysis of physical signs and symptoms, but the essential feature of the challenge presented to him by the patient is that of putting this scientific information alongside his knowledge of the patient as a person, as a member of a family, as an employee or employer, and so forth, so as to arrive at a picture of the patient as a whole person. Unless he instinctively and automatically approaches his work with this attitude of mind, the doctor will fail to make an adequate and complete medico-social diagnosis on which to base his attempts to work through with the patient to a solution, or at least a mitigation, of his problem.

In the clinical subjects, the trend towards full-time teaching and research appointments has accelerated in recent years. This in turn must lead to a further decline in the number of teachers who have a substantial and continuing daily responsibility for the provision of medical care for patients in open society.

One of the phenomena of specialization is that a subject advances by a process of dichotomy. It is not inevitable, however, that two new subjects shall appear. In all clinical subjects, advances sometimes take the form of narrowing the field by sloughing off some of the content of the subject into the undifferentiated field of general practice. In this sense—and this particularly applies to more recent times—what belonged to hospital or laboratory medicine yesterday is to be found in general practice to-day. There is in fact a two-way traffic between hospital medicine and general practice. One possible implication of this is that medical teachers may in future years have to come out of the hospital into general practice to find the clinical material on which students will be taught—not social medicine, preventive medicine, general practice, or psychological medicine, but in fact, and quite simply, clinical medicine.

Specialization is a necessary and a desirable feature of medical progress. Many of our most urgent problems cannot be resolved without further specialization of knowledge and practice. While as general practitioners we welcome specialization, we are of the opinion that special efforts are required to counteract some of its unfortunate but not inevitable by-products. One of these is the impact which specialization at university level is having on trends in premedical education. The granting of exemption from the first professional examination to suitably qualified aspirants for entry into the medical schools has provided an additional incentive to school teachers to encourage their pupils who hope to become medical students to specialize very early in their school careers in scientific subjects, to the exclusion of the liberal arts and humanities.

### Medicine and the Social Sciences

The dramatic introduction of chemotherapy and later of the antibiotics has revolutionized our patterns of morbidity and mortality. We are now much more concerned with the psychological and human relationship factors than with the physical features of man's environment in our search for the major causes of human suffering, misery, and disease. Creeds are indeed much more important than cocci. While we owe a great deal to the contributions made by the psychiatrist in our understanding of the factors which are inimicable to mental health, recent advances in our knowledge of man as a social animal have derived as much from the advances of the social sciences as from contributions from medicine. The increasing complexity of our social institutions and of our rapidly developing social services lead many of us to believe that the medical student requires to be more adequately equipped than he is at present with a knowledge not only of human anatomy and physiology but also of the anatomy and physiology of the society in which he will later practise his profession.

### Provision of Comprehensive Medical Care on a National Basis

The National Health Service provides the framework within which the hospital and specialist services and the public health services can be related to the service provided by the family doctor. Since practically all demands for medical care are initiated at the general-practitioner level, it is in his consulting-room that we are most likely to see the first signs of changes in need and changes in demands for medical care. Members of the general public now possess, in the form of a domiciliary medical service, an eloquent means of expressing their need for an integration of the medical services as a whole, and for closer integration between the medical services and the existing social services. Since our medical schools provide the basic training for all doctors who man this service, they have a special responsibility to study these and other changes which are taking place in the practice of medicine in this country. These changes must in time be reflected in the medical curriculum so that every graduate, wherever his destiny lies, is at least aware of the nature of the work of the family doctor and the relationship which this is likely to have in future years to the contribution made by medical men in other fields.

I would summarize as follows my answers to the question, Why is it desirable that the student should be given opportunities to learn something of the work of the general practitioner? The rapid development of the science of medicine and the evolution of specialization have resulted in the emergence of a new generation of medical teachers who have little or no practical experience of the work of the general practitioner. The clinical and practical teaching in hospitals is becoming concerned more and more with episodes of illness, with categories of disease, and with categories of individuals. The student sees medicine at work in a situation where the nature of the clinical or social problem of the patient is predetermined and selected by the doctor. In contrast to this, the general practitioner is faced with a situation in which he cannot determine beforehand the kind of clinical or social problem with which

his patient will challenge him. It is only in the setting of general practice, therefore, that the student can be given some insight into the wide range of clinical and social problems with which society confronts the medical profession.

The practice of medicine is undergoing rapid change, both as a result of developments in medicine itself and from social pressures being exerted by the community. Trends in specialization are likely to lead us to more energetic efforts to promote collaboration between the several branches of the medical profession and workers in the social services and related fields. An exposure of the student to general practice therefore does not constitute merely an antidote to the philosophy and attitude of mind of the specialist, it should provide that student with an opportunity to learn how he can become a better specialist, enable him to apply the knowledge which he has already acquired, and imbue him with a sense of the indivisibility of medicine. Our College does not advocate vocational training for general practice during the undergraduate years, but recommends that the field of general practice should be exploited in order to widen the professional horizons of the next and succeeding generations of medical graduates.

I have spent some time answering the question Why? because an examination of the factors which make it desirable that the student should be shown something of the work of the general practitioner will itself suggest the answers to the subsidiary questions When? Where? How? and What?

## When Should the Student be Introduced to General Practice?

A questionary sent out in the early days of the College's existence revealed that the majority of our members and associates agreed that the student should be introduced to general practice. A substantial number, however, were of the opinion that this introduction would be most effectively made during the pre-registration year or even a little later. We have moved considerably away from this point of view, and are convinced that every student should have this experience while still an undergraduate, as part of his basic training. The student should be helped to correlate this experience with the teaching he is receiving during his clinical years. For example, he should have some experience of the problem of prescribing in the setting of general practice, *at the same time* as he is being taught therapeutics. If he has had an opportunity while he is still attached to a teaching ward to follow patients through from the wards to their homes and to see the kind of problems these patients present to their family doctor, he is less likely to think of rehabilitation and aftercare as a special branch of medicine, and will begin to appreciate that there is an element of rehabilitation and readjustment confronting every patient when he leaves hospital.

It having been decided that the student should be exposed to this experience during his stay in the medical school, a more difficult question to resolve is at what point in the curriculum should this experience be offered? While it is suggested that the experience which can be obtained in general practice should permeate all the clinical years, and the student should be helped to integrate what he learns in general practice with all that he is being taught in his last three years at medical school, there is much to be said for introducing this subject rather late in the curriculum. If the exigencies of the curriculum allow for only one period of practical experience in general practice, two arguments can be presented in support of the recommendation that this should appear later rather than early in the curriculum. Those of us who have had students in our practices are of the opinion that the less the student knows about medicine the easier it is to arouse his interest in the patient as a person and a member of society. By the time that he is approaching the end of the curriculum, however, he has become much more interested in the disease than in the sick person, and the experience of general practice is most effective at this stage in providing an antidote and a challenge to his own philosophy and point of view.

A vivid first reaction of most students on being exposed to the unselected morbidity which presents itself to the general practitioner is a preoccupation with the quantity of clinical material which they classify as belonging to the specialties, particularly dermatology, ophthalmology, oto-laryngology, paediatrics, and psychiatry. The student is introduced to public health and social medicine at a late stage in the curriculum. A great deal of the work of the family doctor lies in the field of preventive medicine, and the student will gain very much more from the experience if he has already received some systematic instruction in the subject. If schemes of attachment are to be developed so that the student will not be merely an observer but will be given some delegated responsibility for the care of patients in their own homes—learning by doing—he should have at least a nodding acquaintance with these major specialist fields.

## Where Should this Instruction be Given?

The obvious answer to this question is in the practical day-to-day setting of general practice. If we leave aside the general practitioner himself, the field of general practice offers unique opportunities for practical instruction and for challenging the student to think about what he has been taught elsewhere. That this is widely appreciated is illustrated by the diversity of teachers who have taken the initiative in introducing students to general practice. In some medical schools this has been done at the instigation of the dean, in others by a senior physician or surgeon. In others, the psychiatrist, the paediatrician, or the head of the department of public health and social medicine has taken the initiative, and in at least one school the bacteriologist has encouraged this activity.

This teaching need not, however, be confined to the setting of general practice. The general practitioner has in some centres brought his patient to the hospital and has taken part in seminars and discussion groups. These are of great assistance to the student in helping him to integrate the hospital and the domiciliary components of the diagnostic and therapeutic problems presented by the patient. More important than this, they enable the student to see an actual consultation take place between the general practitioner and the specialist.

## How Should it be Taught?

There is practically no educational method which cannot be applied to this subject—"By precept, lecture, and every other mode of instruction."[1] Among the most valuable of all methods is that of attaching the student for a period of two weeks or more to a general practitioner. When fully developed these attachment schemes will enable the student to progress from the passive observer role to a modified apprenticeship. The student is taken right into the doctor–patient consultation in the surgery or in the patient's own home. He sees what the doctor does at the very beginning of the consultation before the clinical problem has been posed. The student is able to observe how the doctor reacts when confronted with the necessity of finding answers to Halliday's questions[2]: What kind of person is this patient? Why did he take ill when he did? Why did his illness take the form that it did?

With a view to being able to answer any appeal from a medical school for help in providing general practitioners who are willing to take students into their practices, our College has produced a register containing the names of more than 1,300 general practitioners who have volunteered to assist in this work. More than 450 of these general practitioners are willing to have the student remain in their practices for an extended period of a week or more. The

remainder are willing to take students from the nearest medical school on a day-to-day basis, on a number of occasions each year. This register has been broken down on a regional basis, and local lists giving full particulars are available at the headquarters of each of our faculties in the United Kingdom and Eire.

The very essence of this kind of teaching is the introduction of the student to the patient by his general practitioner. Many of us are convinced that the most important of all teachers is the patient himself. In the familiar surroundings of his own home and in the presence of his own doctor the patient is more relaxed, more eloquent, and more expressive than he is in a hospital bed. Students repeatedly emphasize the value of home visits in helping them to appreciate the subtleties of the social, economic, and psychological factors of the patient's environment.

### What is the Student to be Taught?

The College accepts, without reservation, that the chief aim of the medical school is to provide basic training for all students. The medical school is not primarily concerned with the provision of vocational training for general practice or for any other branch of medicine. We are therefore of the opinion that, while the student should be taught something about the nature of general practice and given as much insight as possible into the significance of the granting of direct and continuing access of the members of the public to the services of a general practitioner, we are just as interested, possibly more interested, in the basic training of the student who is not going to enter general practice—the future consultant, teacher, research worker, and administrator.

Current trends in morbidity and the nature of the factors which select the kind of clinical material available to medical schools may themselves lead to a movement of the centre of gravity of the medical school from the hospital towards the community, so that medical teachers may in the future come to general practice in order to teach medicine. We are of the opinion that the most important things to be learned in general practice are the intangibles, a philosophy or an attitude of mind. While, therefore, we think that the student has much to learn of a practical nature by studying the contents of the doctor's bag, with the limited time at his disposal we would prefer that he should be given the opportunity of seeing what is inside the doctor's mind. Above all, we would emphasize that it is the practical demonstration of medicine actually at work in open society which is important. It is one thing to tell a student that there are no diseases but only sick persons; it is another thing to manoeuvre him into a doctor-patient relationship so that he can make this discovery for himself.

While I must accept personal responsibility for the views I have expressed, I have made a particular effort in preparing this paper to reflect as faithfully as I could the views and opinions held by members of my Committee and of the Council of the College. I have borrowed freely from their thoughts and writings. I acknowledge the great indebtedness I owe to my own teachers and to the many others with whom I have had the privilege of working since I entered this profession. My thanks are particularly due to my own patients, who have cheerfully accepted our students and contributed freely both to their instruction and to my own.

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# POSTGRADUATE EDUCATION FOR THE GENERAL PRACTITIONER

BY

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In this article the problems of the education of newly qualified doctors who wish to enter general practice, and of the continuing education of established general practitioners, are discussed in outline.

### Nature of the Problem

Dr. David Hughes in his James Mackenzie Lecture[1] tells us of the old doctor, whom he joined in practice, who had been carrying out much the same procedures and using much the same drugs for the previous fifty years. In those days advances in medicine were comparatively few, and a respectable interval elapsed between each epoch-making discovery. An occasional visit to a teaching hospital and the reading of one or two journals were enough to keep the family doctor up to date not only in his own subject but in the whole of medicine and surgery.

Since then we have experienced a therapeutic revolution, which was heralded by the discovery of prontosil in 1935 and a political revolution in 1948—the arrival of the Welfare State and the National Health Service. Between them these two revolutions have changed medicine so dramatically that many of the skills of practitioners of twenty-five years ago are unacceptable to-day. Innumerable techniques and methods have had to be pruned and others grafted in their place to enable the older practitioner to keep up to date. New drugs, new techniques, and new methods continue to appear so regularly now that the newly qualified doctor is soon behind the times if he does not embark at once on postgraduate study. A high proportion of the prescriptions written now by the family doctor could not have been written twenty years ago because the drugs did not then exist. The general practitioner must know which new drugs, investigations, and methods to adopt, and which of the old to reject. He must keep broadly in touch with what is being done in the specialized branches of medicine so that he will not unwittingly withhold from his patients the benefits of recent developments, such as those in the surgery of the heart, the lungs, or the eyes. At the same time he must make sure that his patients are directed to the right consultant so that they do not embark upon the soul-destroying tour of many special departments which can so easily add psychoneurosis to an undiagnosed physical illness.

In the Fourth Annual Report of the College of General Practitioners[2] we read: "If the family doctor's professional and academic standing is to bear comparison, at all times, with that of his colleagues in other branches of the profession, he must look to his intellectual development and progress throughout his career. The College of General Practitioners has come into existence, in large part, to satisfy this need, which it can do through its regional faculties."

The College of General Practitioners has now more than thirty faculties in the United Kingdom and overseas, most of which correspond with the area served by a university with a medical school. Each faculty board has its own postgraduate education committee which attempts to co-ordinate the opportunities for the postgraduate education of members and associates of the College within its own area, and to increase these opportunities where necessary. The faculty boards do not in any way interfere with the work of the deans of postgraduate studies in the universities, though if and when they are invited they may be able to do much to help in the planning and organization of courses for family doctors at the medical schools and hospitals in their areas.

The Postgraduate Education Committee of Council sent out in 1955 a questionary to all members of the College in order to obtain their views on all aspects of the postgraduate education of the general practitioner. The answers of 1,664 doctors in active general practice have been analysed[3 4] and reference is made to the "questionary" later in this article. Though 1,664 is only a small proportion of the 22,000 general practitioners in the United Kingdom, it must be remembered that those who answered were sufficiently interested in the postgraduate education of general practitioners to answer an eight-page questionary, and the results of the analysis must therefore be of significance.

## Training of the Newly Qualified Doctor for General Practice

The need for training young doctors for general practice has been recognized by the Government by the institution of the trainee practitioner scheme. There has been much criticism of this scheme, and, while many principals and trainee assistants have praised it, others have said that it is a waste of time or exploitation of labour.

The section of the questionary which deals with the training of assistants[3] makes interesting reading, and was answered by 1,580 doctors, over 240 of whom had had trainee assistants. From trainees the most significant criticism was of the lack of training, and from trainers that the period of training was too long if the trainee did not take full responsibility for patients. It is hard to believe that general practice can be learnt in less than a year, any more than that a student of agriculture can see the work of a farm in less than this length of time. The study of general practice would not be complete without experience of spring epidemics any more than a study of farming would be complete without participation in the harvest. The lack of training of which some trainees complain may be either because no effort is made to instruct or because the trainer has no clear idea of what he should teach.

The Midland Faculty of the College has considered carefully the non-clinical subjects that should be included in a syllabus for the trainee.[5] It has published a booklet which covers, in the practice, such subjects as surgery premises, record-taking, equipment in the surgery and the car, laboratory work in the surgery, dispensing, and the administration and finance of general practice; outside the practice, the work of the local authority, including the various branches of the health authority, the school health service, the welfare department, and the children's department; the local offices of the Ministries of Labour, Health, and National Insurance, and the Assistance Board; together with the various voluntary organizations—British Red Cross Society, St. John Ambulance Association, Women's Voluntary Services, National Society for Prevention of Cruelty to Children, Marriage Guidance Councils, and many others.

The trainee should not spend all of his year watching one doctor in his practice. If during his year he visited an isolated country doctor, a practice in a residential area, an industrial area, an overspill housing estate, and a country town doctor working in a small hospital, assisted an industrial medical officer, and spent some time with all the local authority, government, and voluntary organizations mentioned above, he would obtain a broad view of general practice and of the health services generally, and at the same time he would be able to follow the sequence of the general practitioner's year in his trainer's practice.

Inevitably the trainee will find weaknesses in his professional knowledge after his year in general practice. He may feel the need for further hospital training in special subjects such as obstetrics, dermatology, E.N.T., ophthalmology, paediatrics, or psychological medicine. There is a strong case for introducing hospital appointments, of junior registrar grade, during which the holder would spend two or three months in turn in those departments where he felt his knowledge was weak. Whether this rotating internship would be of greater value before or after a trainee assistantship would depend largely on whether or not the young doctor had seen something of general practice while a student. It is submitted that a combination of a traineeship and rotating internship, as outlined above, would constitute as sound a training for general practice as does a registrarship for the young consultant.

## Continuing Education of the Established General Practitioner

Any discussion on the postgraduate education of the general practitioner tends to centre in the subject of organized courses and the meetings of clinical societies. It cannot be stressed too strongly that it is possible to keep up to date by a discipline of self-education. In the Fourth Annual Report of the College[2] are listed thirteen ways by which a general practitioner can keep up to date. Only one of these thirteen methods refers to organized courses and lectures.

The first and most important method of self-education is to carry out good general practice. There can be no education without careful history-taking, full examination, and adequate note-taking. Admittedly this is a counsel of perfection to a doctor with a large list of patients, but it can be followed in most prolonged, serious, or obscure illnesses; and from the clinical confidence and interest stimulated will follow critical reading of the literature, thoughtful prescribing, and intelligent discussion, when required, with a consultant.

The analysis of the questionary shows that a general practitioner usually takes several journals and that few take less than two.[4] If he owns in addition a small up-to-date library of reference books he probably has as much reading material as he can digest. The College plans in the near future to set up a small exhibition library of the textbooks that are most likely to help a general practitioner. This collection will have to be reviewed regularly and books discarded as they become out of date.

The family doctor has much to learn from his consultant colleagues. He is often short of time, but attendance at domiciliary consultations, visits to patients in hospital, and discussion of specimens and *x*-ray films with pathologist and radiologist will nearly always result in some new knowledge being gained, or a new process of thought being stimulated.

Many general practitioners have said that the institution of domiciliary consultations has been the greatest contribution that the Health Service has made to them and their patients. Conversely, the gradual exclusion of the general practitioner from the use of hospital beds has had the effect of lowering the standard and scope of general practice. There can be no better method of education for a family doctor than to treat some of his own patients in hospital and exchange views with consultant colleagues, and no greater stimulus to the mind than to take responsibility for or share in the care of a difficult case. For those general practitioners who already have hospital appointments the problem of continuing education is much less difficult than with others, and it is to be hoped that more general practitioners will be brought back into the hospital service either to treat their own patients or to carry out postgraduate study by means of short-term clinical assistantships in different departments.

One further and important method of self-education remains to be mentioned—the teaching of general practice to others. A teacher must keep up to date. A successful general practitioner may bluff his patients and himself, but he will never bluff a medical student or trainee assistant.

Though the individual family doctor can, by his own initiative, keep himself reasonably up to date, he will still need to attend courses and organized lectures to complete his continuing education. The Ministry of Health recognizes this, and will pay the fees and expenses of national health practitioners for up to twenty-two half-days a year, which is equivalent to about eighty hours a year. These allowances are paid only when the course has been officially

recognized by the Ministry, and there are still many good courses held each year which have not been recognized.

### Difficulties in Postgraduate Study

The College of General Practitioners believes that, except in special circumstances, a family doctor should attend at least twenty hours of organized postgraduate study each year. The optimum amount of formal study will vary for each individual, and will depend on many factors, such as the time at his disposal and how great are his opportunities for self-education. It will be likely to fall between the minimum figure set by the College and the maximum that the Ministry is prepared to subsidize. In stressing the importance of attending organized courses we must remember the danger of a practitioner becoming so obsessed by attending courses that his own practice will suffer. The Ministry has been wise to set a maximum subsidy for this type of postgraduate study.

In the questionary members of the College were asked to state what they considered to be the main obstacles to postgraduate work. Their replies are listed as followed :[4]

| | | | |
|---|---|---|---|
| 1. Lack of time | .. .. .. | 75% .. | 1,224 |
| 2. Deputizing difficulties | .. .. | 38% .. | 613 |
| 3. Distance from courses | .. .. | 32.5% .. | 525 |
| 4. Lack of ancillary help | .. .. | 12% .. | 190 |
| 5. Lack of practice in studying | .. | 8% .. | 130 |
| 6. Courses too elementary | .. .. | 5% .. | 81 |
| 7. Courses too highbrow | .. .. | 5% .. | 80 |
| 8. Family or social commitments | .. | 3.5% .. | 58 |
| 9. Financial difficulties | .. .. | 2% .. | 29 |

These answers are interesting enough to be worthy of further comment.

Lack of time and deputizing difficulties are by far the commonest problems mentioned, and it would be valuable to know why this is so. Attending courses for one or two weeks necessitates either the employment of a locumtenent or a partner taking over the work in the practice. While the Ministry will pay for a locum for a single-handed practitioner, it will not do so for a man in partnership. Consequently the doctor in partnership must rely either on the good will of his partners for leave of absence from the practice, or on the good will of his family to let him use part of his holiday for attending a course. There are two simple solutions to this problem : firstly, the inclusion in every partnership and assistantship agreement of a clause allowing for study leave ; and, secondly, for the Ministry to pay for a locum when a doctor in partnership attends a course, as is already done in Scotland.

For meetings of clinical societies, extended courses of half a day, a week, or for week-ends, the problem is different. A full visiting-list may make even a few hours' absence from the practice impossible ; a single-handed doctor may have difficulty in finding a "stand-in," and the distance from the lecture or meeting may be too great. Encouraging developments for overcoming these difficulties are the increasing number of evening and half-day rota systems that are being set up, and the tendency for general practitioners in areas distant from teaching centres to establish small discussion groups and clinical societies of their own. Experiments in recorded lectures, described elsewhere in this issue by Drs. John and Valerie Graves, should be of great assistance to isolated doctors and to small groups of doctors holding meetings without a guest speaker.

It is disturbing to note in the answers to the questionary[4] that no fewer than 130 doctors confess to lack of practice in studying. Whether this is due to disillusionment and dislike of the work in general practice or to lack of opportunity, it is a challenge to us all to see that general practice is kept interesting and vital, and that entrants to this branch of the profession are provided with stimulating opportunities for study from the beginning of their careers.

The fact that equal numbers of practitioners say that courses are "too highbrow" and "too lowbrow" shows the need for variety and that some indication of the type of course—for example, revision or recent advances—should be made when the course is advertised.

### Organization of Courses

Comments in the questionary on courses that general practitioners had attended were usually favourable, but some adverse comments were made about either their administration or their content. The importance of good administration cannot be overstressed. Matters such as lectures starting and ending at the advertised time, allowing adequate time for discussion, and the avoidance of long periods when the doctors on the course are kicking their heels and waiting for the next lecture, must be carefully considered. Discussion following a good lecture is often the most valuable part of it, for this is the time when the general practitioner can mention the problems that have arisen in his own practice—points that may not have been considered in the formal lecture, but which may be clarified in the discussion period by the lecturer or by another general practitioner present.

When choosing the programme for a course the organizers should relate their lectures and demonstrations to a general practitioner's day-to-day work, remembering that 90% of this is concerned with the commoner diseases.

A family doctor who attends a general refresher course will hope to review in detail the commoner conditions and also hear in outline of important developments in the treatment of rarer diseases, and something of the work in the more highly specialized branches of medicine. By careful rearrangement of the programmes from year to year it should be possible to cover the whole of medicine over a period of five or six years. When highly specialized subjects are being discussed it is the overall picture rather than detail that interests the general practitioner. Conversely, when diseases which he usually treats himself are being discussed he will want to know minute details of technique. Many subjects are best considered by a group of lecturers—physician, surgeon, pathologist, and radiologist—each of whom can give his point of view. Those who arrange courses are often well advised to invite a general practitioner of experience to help them in planning the course and in opening or closing discussions. He can explain the general practitioner's viewpoint and ensure that subjects are approached from an angle which will interest his colleagues. Perhaps this helping and advising of the organizers of courses is one of the most important contributions that postgraduate education committees of faculty boards can make to organized postgraduate education for the general practitioner.

Many family doctors prefer to attend a course devoted to one particular branch of medicine, either because they are especially interested in the subject or because they feel that their knowledge of it is weak. Courses of two days or a week are already held in subjects such as obstetrics, psychological medicine, anaesthetics, dermatology, paediatrics, chest diseases, and cardiology. The principles that apply to the organization of general refresher courses apply also to these. The organizers must remember that they are teaching family doctors and not young consultants, and the lecturers should concentrate on broad principles rather than detail.

However many formal courses are arranged, there will always be a number of family doctors who wish to make a detailed study of one or two particular conditions, and for whom there is no appropriate course. The College of General Practitioners is fortunate in being able to award several grants each year to these general practitioners so that they may arrange for themselves suitable courses of study in hospitals and clinics.

### Summary

If general practice in this country is to maintain its traditional high standard when medical science and thought are expanding so rapidly, it is essential that the family doctor should be given many opportunities to keep up to date. Though much has been accomplished already, there is still a great deal to be done before

young doctors are adequately trained for general practice, and established practitioners can obtain all the continuing education they require.

It has not been possible in this article to do more than mention briefly some of the main problems and offer a few suggestions to solve them. The views expressed are my own, but I am grateful for the help and encouragement of many members of the College of General Practitioners throughout the country.

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# KEEPING INFORMED BY TAPE AND DISK

BY

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The idea of being kept informed by tape and disk arose when we were engaged in the analysis of some of the replies to the questionary sent out to members of the College of General Practitioners by the College's Postgraduate Education Committee. We were struck by the number of general practitioners who found difficulty in attending courses because of lack of time, deputizing difficulties, and so on. Many said that "few meetings are held in this area now, as it is not worth getting a speaker to come for just a few people." Why not, then, take the meeting to the general practitioner? We decided to make a trial of recorded talks, which, we thought, would not only bring good speakers to those who would not otherwise hear them but also provide an incentive to hold small meetings, with discussion, often as valuable as the lecture itself.

## Argument

It may be said that as reading is quicker there is little point in going to all the trouble of recording talks, but the following points should be considered.

*Advantages of Auditory over Visual Education.*—The spoken word has more power to command and hold attention, and no skill in printing can reproduce the expression, timing, and emphasis by which a speaker brings home his points—let the reader contrast the speeches of Sir Winston Churchill with their printed replicas—but the speaker must be good. There is no better soporific than a bad lecturer. That this is not just a biased impression is suggested by the observations of Joyce and Weatherall (1957), who found, in comparing different methods of education, that auditory methods were best—even the old-fashioned formal lecture, which was only just beaten by discussion groups, which, of course, use far more time and staff. Diagrams, formulae, and pictures can be understood more quickly and easily if the eye is free to concentrate on them while the ear listens to the exposition.

*Dangers of Unsupervised and Unplanned Reading.*—Joyce and Weatherall found this method of teaching "consistently least effective" for undergraduates, and for postgraduates the danger becomes greater as the time since qualification increases. The newer the method of treatment, the more strange it will appear, and the greater the chance of articles on it being ignored in haphazard reading.

*False Confidence in Reading.*—Many doctors suffer from two delusions: (1) that they always read the journals that they buy; and (2) that they, having read a journal, have not missed anything in it. It is a salutory experience to test oneself on these two points. Gaps in knowledge are most readily brought to light by free discussion between friends and equals.

*Geographical and Academic Isolation of the General Practitioner.*—It is easy to understand that the general practitioner can be cut off by lack of time or by distance from courses; but academic isolation, though less tangible, is no less real. It includes lack of practice in studying and in arranging thoughts and decisions in an academic way. Working alone, the general practitioner may lose the ability for mental gymnastics, so that the rapid cut and thrust of argument at ward rounds may leave him feeling discouraged and inadequate. We hope that the issue of recordings will encourage him to seek out his neighbours to discuss what they have heard, to read in a more selective way, and perhaps to go on ward rounds with a firmer tread. The ideal recording would not supplant formal postgraduate teaching, but would point the way to a fuller use of it.

*Novelty of Education by this Means.*—The reaction of the average doctor to paper by post is now almost nil, as any organizer of activities knows to his cost, but it is still difficult to resist the appeal of a recording, which cannot be glanced through, and which requires the setting aside of a proper period for its hearing. (Listening while shaving or driving cannot be too strongly condemned.) But the value of this novelty will be irretrievably lost if it is spoiled by the anticlimax of poor material.

*Tape-Recording Already used in Education.*—In other fields much use has already been made of this valuable tool. Schools use it for many subjects, not only languages, and it is of great value for blind, deaf, or other handicapped children: the prospect is enormous and still largely experimental. Many authorities are building up libraries of educational recordings. In medicine, many subjects, such as cardiology and psychiatry, are particularly suitable, and undergraduate teaching makes some use of recordings. In the United States of America many varieties of recorded education are available, of which we will mention only the Audio-Digest Foundation, which distributes weekly abstracts of literature on tape to medical subscribers, and the Seminar Kits made by the University of Utah College of Medicine, which are lectures on gramophone disks, with illustrations. Some medical societies overseas which have widely scattered members already make recordings of their meetings for members unable to attend.

## The Experiment

We proposed to send out, not abstracts or recordings of previous occasions, but talks specially made for the microphone and for our particular audience. The response to only the first two recordings is described. After those, although the experiment continued and merged imperceptibly into the present Medical Recording Service of the College, the scheme was much modified and the "audience" became much larger.

*The Listeners.*—These were selected by picking out from the replies to the questionary 50 of those College members who had said, for one reason or another, that they had been unable to get to courses. They were by no means a random sample or representative of the College as a whole, but they all wanted to keep up to date. Twenty-seven agreed to take part in the trial. Many of them were from country areas, including some very isolated places, but some were from towns (25% of College members work in rural or semi-rural areas), covering most parts of Great Britain. Five had tape-recorders, the others had long-play record-players.

## Material and Method

The first recording consisted of a 15-minute introductory talk describing the experiment, followed by a 15-minute talk on recent advances in virus disease. This subject was chosen as it has a distinct bearing on general practice and is likely to be thought "too technical" in print. Compared with later ones, it was not acoustically a good recording, was read from a script, and was very concentrated. The second also lasted 30 minutes and was a much better recording: an informal talk by a general practitioner on psychiatry in general practice, a subject for which there had been many requests. The talks were first recorded on tape, and, from this, soft disks were cut. (These are similar to commercial L.P. disks except that, being individually cut from shellac, small numbers can be ordered, whereas the more serviceable hard pressings have to be bought by the dozen at least.)

The listeners were divided into four groups: one group of doctors with tape-recorders, and three groups of those with gramophones. The tape or disk was sent to the first member of each group, who was asked to listen as soon as possible, and then post it to the next man on the list, the last returning it to us. In the package were included two envelopes: one, to be read before listening, gave general instructions and a description of the recording; the other, not to be opened until after listening, contained the following questions: (1) Did you find this more, or less, instructive than reading a similar talk? (2) Did you have difficulty in finding time to listen? (3) Be honest—would you have *read* this kind of article? (4) What length of recording would you prefer? (5) Suggestions for future recordings. (6) Any other comments.

Listeners were asked to reply to these questions in a letter to us when they posted on the recording, which also gave us a clue to its whereabouts. They were asked, if possible, to collect a group of colleagues to join them in listening and discussion.

With the second recording went a different set of questions: (1) Did you find this recording helpful? (2) We shall be making more detailed talks of psychiatry for loan on application—would you like to hear them? (3) How many doctors listened to this talk with you? This recording was sent out only on disk, and to 14 listeners at that time, although very many others have heard it since then, and it was used for the first tape-discussion.

## Results

Of the 27 doctors who received the first recording, 18 found the method more instructive than reading, 4 less, and 3 were not sure. Four thought that it was easier to concentrate when listening than when reading, and two thought that the novelty had a lot to do with it.

Twenty-two said that they had not had much difficulty in finding time to listen, and five said it was not so easy. Some added the proviso that it was all right if they had four or five days. (In fact, few kept the recording for more than a few days. One circuit of eight doctors, including postage time, was completed in just over six weeks. During that time about half of the listeners managed to collect others to listen. This was, however, during January–March. Summer circuits are naturally taking much longer.)

Eleven would have *read* a similar article, 14 would not. But only *one* actually saw the article in print and read it—a very similar one was in several journals at this time—an example of false confidence in reading.

Thirty minutes was the most popular length.

A long and carefully thought out list of suggestions for future recordings was received, which was very similar to the requests for subjects for courses from the questionary replies, with much emphasis on recent advances, and new drugs.

The 14 replies to the second set of questions were uniformly monotonous. All who heard this (second) recording found it helpful, all wanted to hear more, and 33 other doctors had listened, so that, on an average, each had gathered two or more friends for discussion.

*Other Comments.*—We were pleasantly surprised by the interest and enthusiasm aroused by this trial. We had many long letters full of every kind of advice, suggestions, and offers of help, besides comments and criticisms. Allowing for kindness towards a new venture, we had the impression that recorded talks would find a willing audience. We noted very soon a difference between the tape-recorder and gramophone listeners—the former being more trenchant, though more constructive, in their criticism, and wanting less formality and more "audience participation," while the latter were more conservative and perhaps less critical.

## Conclusions From the Trial

### Technical

From this trial we learned a great deal, which may be summarized thus:

1. Soft disks, although fairly tough, are not equal to ordeal by G.P.O. Many were badly scratched, and after one was returned from the Highlands actually bent we decided to increase the number of our listeners to justify the expense of commercial pressings. Suitable postal containers remain a headache, but we hope to overcome this shortly.

2. Very good quality indeed is required if the recording is to be transferred from tape to disk. Without professional equipment it is impossible to make a good enough recording of a meeting or discussion in a public place, because acoustic conditions are usually bad. We have made many such recordings, but while they are satisfactory enough on tape, they will not do for the disk. We now record entirely, if possible, in ordinary living-rooms, which have the added advantage of putting the speaker more at his ease.

3. We soon found that any formality (such as reading from script) or artificiality of manner was mercilessly exposed by the microphone. To sound right, the talk must be informal, unscripted, almost "armchair." Some speakers can achieve this without effort, some perhaps never, and some rely very much on gesture or expression. One learns to recognize a good microphone speaker, and we are sure that there is a whole new field of talent awaiting discovery.

### Non-technical

The response to this short trial encouraged us to believe that there was a demand for recorded talks, and we invited any interested members of the College to join in further experiment. Most of them would be able to listen only to disks, but a surprising number of doctors have tape-recorders, and many of them (like tape-recordists everywhere) have a great deal of energy and enthusiasm, and correspond on tape with others here and overseas. We hope to let them play a really active part in postgraduate education by joining in tape-discussions, recording their own cases for discussion, or by acting as "local correspondents," these being some of the ideas suggested by those taking part in the trial.

## The Medical Recording Service at Present

This is now a regular service of the College of General Practitioners to its members, well over 100 of whom are now receiving recordings regularly. They are by no means all "geographically isolated," as many of them come from the great towns. The "circuit" system worked well during the trial and is still used, talks being sent round groups of about 10 members each every other month. Five talks have been completed and many others are in the making. About half are by consultants and half by general practitioners with a special interest or experience, titles and subjects being drawn at first from our original list of requests. Where possible, illustrations accompany the recording, either as duplicated diagrams or transparencies (a small pocket viewer is enclosed) to be studied while listening. For

example, one talk on skin disease is accompanied by a series of 24 transparencies and two diagrams.

Members on our list receive tapes or disks at regular intervals, but they can, on request, have a particular recording again, perhaps for a meeting, as can any other member of the College.

Also available on request to members are a number of recordings which will form the nucleus of our library. These include recordings of notable College occasions such as the James Mackenzie Lecture, and more detailed talks on subjects, such as more advanced psychiatry, which have been asked for by members but may not appeal to all.

*The Discussion Tape.*—This is a new feature of the service, which is still experimental. Accompanying each recorded talk to listeners with tape-recorders is a blank reel of tape. After hearing the lecture, each listener has five minutes of tape to record his own comments, ask questions, and air his views. This tape will go round a second time so that the earlier speakers can hear the whole discussion—about half an hour if each member of the circuit adds something. In some cases the original lecturer will answer the questions and round off the discussion before the completed tape goes out again. This is a very popular idea, as even the shyest listener can have his say, without fear of interruption, with as much time as he likes for preparation. The following comments, taken from part of the first discussion tape, give some idea of the response.

"Two colleagues came 12 and 6 miles and felt it well worth while, and we had a stimulating discussion . . . the Medical Recording Service is doing a real service to medicine . . . unenlightened G.P.s can be shown the virtue of joining the College through the virtuosity of its members."

"This was a thoughtful and well-delivered address, and held my interest throughout. . . . The contributions of the others before me were of almost as much value as the lecture."

"My partner and I had a very enjoyable evening listening to the talk and discussing it."

"If I'd been the first . . . I think I'd have said I'd rather have read the lecture, but now I see how much better it would have been if I'd invited other doctors to listen with me. I hate psychiatry and fear mentally upset people, so to make up for it I used to read a lot, but it only made me feel more inferior. This talk has shown me that perhaps I've been approaching the subject in too highbrow a fashion. . . . You've done me a lot of good."

They all described their own problems and asked questions, comparing notes with one another. It is impossible to convey in print the excitement of hearing the voices of doctors, separated by hundreds of miles from the lecturer and from one another, discussing their reactions to a talk that they had listened to, as if together. Except for short intervals of time, they *were* together, and it should be remembered that tape, needing no processing and quickly copied, can be sent directly after a lecture or event to listeners anywhere, probably more quickly than it could be put into print.

### Plans for the Future

Talks will continue to be sent out at regular intervals, and we shall hope to cover a large field of subjects. Our aim, however, will always be to direct attention to, and stimulate interest in, other methods of education, particularly discussion groups.

We are experimenting with recordings of heart sounds and other subjects, to see whether we can make use of them, as some subjects are more suitable than others, and an enormous amount of research on technical points needs to be done. We hope eventually to build up a comprehensive library for the College, so that any member will be able to obtain an up-to-date talk or course in any subject. Recordings of historical interest to the College will be collected for its archives.

We hope overseas members will be able not only to listen to our recordings, but to send us some of their own, so that real contact can be made with them.

In these ways we hope to advance a step further the work that the College has already done in bringing together its members and giving them a feeling of brotherhood and unity of purpose.

We thank Smith Kline and French Laboratories Ltd. for paying for the production costs of both the original trial and the present Medical Recording Service; and John Hassell Recordings for technical advice and help. Also the countless members of the College of General Practitioners whose enthusiasm and help made the idea become fact.

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# PSYCHOLOGICAL MEDICINE IN GENERAL PRACTICE

## A REPORT PREPARED BY A WORKING PARTY* OF THE COUNCIL OF THE COLLEGE OF GENERAL PRACTITIONERS

A working party of the Council of the College of General Practitioners was appointed to study psychological medicine in general practice, after a request had been received from the Ministry of Health for the views of the College on this subject. It accepted as a definition of *psychology* "The science which deals with the mind and mental processes," and of *psychiatry* "The recognition and treatment of diseases of the mind" (*Stedman's Medical Dictionary*).

First, written evidence was obtained from 27 members of the College who had expressed a special interest in psychology and psychological medicine in a general practitioner's work. Next, details of the teaching of these subjects were sought from all medical schools in the British Isles and from some in the Commonwealth. A draft report was then sent to the Association of Teachers of Psychiatry in Undergraduate Medical Schools, to members of the Psychological Medicine Committee of the British Medical Association, the Royal Medico-Psychological Association, and the Society for Psychosomatic Research, to all members of the Council of the College in the United Kingdom and Eire, to many consultant psychiatrists, and to others.

This report, which has now been submitted to the Ministry's Standing Advisory Committee on Mental Health, discusses the importance of this branch of medicine in general practice, and the types of psychological illness seen by family doctors; it examines the leading part that should be played by all family doctors in this work, and the undergraduate and postgraduate instruction they require; it points out the help that may be given by a general practitioner with a special interest in the subject, and his particular needs at present; and it makes six recommendations.

### Importance of Psychological Medicine in General Practice

Every good family doctor must be a good psychologist, for psychological medicine is part and parcel of all general practice. To misdiagnose organic disease has long been regarded as a serious error; it is now appreciated that to miss psychological illness is just as bad and may lead to even greater unhappiness. So much

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of medical teaching is concerned with organs and tissues that students, their teachers, and family doctors sometimes lose sight of the patient as a person whose anxieties, fears, griefs, rages, guilts, and inadequate relationships with other people can, and do, make him ill. When a person brings such a trouble to his doctor, both of them at first may be genuinely unaware that it is related to emotional upset, the significance of which may emerge only during treatment. All medical training should convince students that the person who is ill is as important as the illness from which he suffers, and that the kind of doctor is often as important as the kind of patient he is treating (Bomford, 1958). Psychological illness is one of the most pressing matters confronting the medical profession to-day; in this report only those aspects of it which are of special significance to general practitioners are considered.

The psychological problems which confront family doctors have been listed by the working party. One difficulty in compiling such a list is lack of a common classification; another is that any assessment of their incidence can only be approximately correct. The percentage of people reported with psychological illness in any general practice depends not only on the type of practice but also on the assessor, his diagnostic skill and criteria, and on his attitude towards his patients. Pemberton (1949) found 6.5% and Paulett (1956) 70% over a five-year period, while the generally accepted figure is in the region of 30%. The true incidence is probably more uniform from one practice to another than these studies suggest. The more we attempt to elucidate this subject the more impressed are we by its purely quantitative aspects.

## Types of Psychological Illness Seen in General Practice

Psychological illnesses seen by family doctors fall into five main groups, which frequently overlap.

### 1. Anxiety and Depression from Emotional Stress

All people suffer from transient anxiety and depressive states due to the inevitable bereavements, disappointments, stresses, and strains of life. They usually get over them on their own, helped perhaps by the sympathetic understanding of a relative, friend, or minister of religion. Many symptoms are produced by such emotional upsets, from headaches, insomnia, or palpitations to anything else of which a patient may possibly complain. In children, behaviour disorders—from tantrums to truancy—often take the place of subjective symptoms; their understanding and treatment are an important part of general practice. Every organic illness has its natural psychological component, which may be mild and hardly noticed or severe; some are more likely than others to be accompanied by superadded emotional upset—for example, cancer, venereal disease, arthritis, heart attack, or stroke. Certain symptoms are particularly prone to cause reactive anxiety or depression, such as pain, bleeding, a lump, failing vision, deafness, or infertility. Influenza, sinusitis, and jaundice are sometimes associated with, or followed by, an unusual degree of depression, which also occurs after treatment with certain drugs (sulphonamides, reserpine), and after deep *x*-ray therapy. Rehabilitation following any serious injury or illness brings its own emotional problems.

### 2. Constitutional Liability to Anxiety or Depression

When some sensitive and imaginative people are subjected to stress they may develop anxiety or depressive symptoms which last longer than normal. This group embraces not only the weaklings but also many of the outstanding thinkers, leaders, scientists, doctors, teachers, artists, musicians, poets, lawyers, and churchmen of every generation. When stress produces incapacitating symptoms for a long time, or when these develop without adequate cause, there is often evidence of some degree of inherited nervous predisposition. Mild endogenous depression developing insidiously, with symptoms which may be referred to any part of the body, is one of the commonest psychological disorders met in general practice. It gives rise to much transient disability and unhappiness; it responds well to modern treatment; and yet not to recognize it, or to mistake it for organic disease, is possibly the most frequent diagnostic error made in medicine to-day. Some hypochondriacal and obsessional states (with phobias) also fall into this group. Other people suffer from illnesses on the borderline between physical and psychological disturbance—premenstrual tension, spastic colon, ulcerative colitis, asthma, or eczema. The aetiology of these is often partly constitutional and partly bound up with emotional state. It must never be forgotten that mind and body are interrelated and interdependent components of the whole, and that emotional conflict has profound effects on function and physical condition, and vice versa. The constitutional nature of many of these disorders must be clearly recognized. In the present state of our knowledge many of these people have to be supported and managed by their family doctors, rather than cured, so as to make life tolerable not only for the patients themselves but also for their families, neighbours, and all others associated with them.

Mild episodes of stress disorder do not require skilled psychiatric attention, any more than do the slight bruises and strains received in everyday life need the care of an orthopaedic surgeon. When symptoms are severe, however, expert psychological treatment may be wanted. Not every doctor likes this kind of work or is temperamentally suited to it; many have not had appropriate training or experience; and some deliberately avoid it, for they find such patients time-consuming, embarrassing, boring, or just "difficult." Such likes and dislikes apply also to other branches of medicine. Some family doctors, on the other hand, have a special aptitude for psychological treatment which patients soon recognize and appreciate; and much of this work is well within the scope of general practitioners who are interested and have been trained in this subject. Many experienced family physicians, in the past and to-day, have taught themselves the art of how best to handle these patients, often highly successfully. Younger doctors can now be greatly helped by proper undergraduate and postgraduate instruction.

### 3. Other Constitutional Personality and Behaviour Difficulties

The majority of personality upsets and behaviour difficulties met in general practice lie on the fringe of normality; but they have to be recognized and taken into full account by a general practitioner trying to assess and manage an ill person. When more severe they include antisocial behaviour and delinquency, alcoholism and other addictions, sexual perversion, and hysteria in all its manifestations. Most of these need specialist advice and treatment, but not all can be cured; many of the remainder, when they ask for help, can be usefully supported over long periods by their family doctors.

#### 4. Organic Brain Disease

The management in their homes of patients with psychological symptoms associated with organic disorder of the brain (after head injury, in epilepsy, in mentally subnormal children, arteriosclerosis, cerebral tumours, and so on) is another important part of a general practitioner's work.

#### 5. Psychoses

Schizophrenia, severe manic-depressive psychosis, and the psychotic later stages of many organic cerebral diseases are comparatively rare in general practice; but the unique part that a general practitioner can play in their early recognition may be of supreme importance both to the patient and to his family. Involutional depression and arteriosclerotic senile dementia are by no means uncommon, and may be a heavy burden on a busy doctor, especially in patients who prove uncooperative or suspicious. In future it is likely that a larger proportion of patients in mental hospitals may be helped enough by modern treatment to be returned to their homes under the care of their general practitioners.

### Psychological Medicine in the Work of all Family Doctors

In the treatment of people with psychological illness every general practitioner starts with an advantage over the consultant because of his knowledge of his patients and the background against which they live their lives, his accessibility to their families, and the continuity of his contact, perhaps over generations. He is the person best fitted to manage the great majority of psychological ailments. His predecessor, the old-time family physician, with his commonsense approach, did extremely well in this field as confidant, counsellor, and supporter of the families under his care. To-day the general practitioner's opportunities to know his patients and to help them psychologically are still unique, especially in country practices where he is part of their environment. He lives among them, and has many close ties with them. He knows their family histories and past histories; he may be present when they are born, married, or dying; he examines them in his surgery or visits their homes when they are sick; he sees them at work and at play; and he knows how they usually behave. In course of time he may learn much about their characters and personalities, troubles and anxieties, sympathies and affections, responsibilities and ambitions, and their habits with regard to smoking, alcohol, and medicines; and he probably knows something about their morals.

A good family doctor, with this background of continuing friendly interest in the lives of his patients, can listen with understanding and consideration while they talk freely about their difficulties. By sympathetic explanation, reassurance, advice, and support, and with suitable medicinal treatment, he can, by himself, help them enormously. The first interview in any illness is often the most important. Sometimes a full physical examination is required before reassurance can be given; although, when the basis of the trouble is clearly emotional, much may be gained by indicating this to the patient at the outset. Expert listening will comfort many worried people; and repeated or extended interviews may perhaps be needed to enable some patients to work through their various problems. This simple psychotherapy and the privilege of this intimate personal doctor–patient relationship, with its mutual trust, affection, and confidence, has always been and will always be cherished by both patients and their family medical advisers. It may take up time which cannot readily be spared; but, if the emotional nature of the illness is not recognized, quite as much time, or even more, may be spent over the years trying to control a hypothetical, non-existent organic disorder.

There are certain limitations to this relationship which should be clearly appreciated. In large town and city practices, with enormous lists and nomadic populations, it is impossible to attain the ideal expressed above; but the better the doctor the nearer he approaches it. However friendly a family doctor may be with his patients, it sometimes happens that they fail to enlarge on their private worries, and keep much deeply hidden for years. The very closeness of a general practitioner to other members of a patient's family or friends, especially if they mingle in the same social set, will often be a bar to the revelation of embarrassing feelings or events which the patient may prefer to discuss with a complete stranger. For instance, a young woman may not disclose frankly a personal difficulty because her general practitioner may be thought to be too nearly identified with the points of view of her parents; she may prefer to take her problem to another. No doctor should feel hurt if a patient decides to discuss a private problem with a more distant, neutral adviser.

The family doctor has many allies in this field, and if he fails to make the best use of them he will provide less than the optimum service to his patients. They include his partners, assistants, and consultants; the patient's relatives, friends, or employer; medical officers of health; psychiatric and other social workers, State-registered nurses, health visitors, midwives, and almoners; domiciliary occupational therapists, physiotherapists, home helps, and citizens' advice bureaux; the clergy, teachers, marriage guidance counsellors, and qualified lay psychologists; duly authorized officers, probation officers, and the local representatives of a great variety of other statutory and voluntary social organizations. Every attempt should be made to link up general practice with these social and other services. Some patients will derive more benefit from them than will others. Everyone realizes that school problems can often be settled by consultation with a teacher, and the educational psychological service can be of great value in managing these difficulties in children. Sometimes it is only the minister of religion who has access to a person's confidence; religious faith can play a large part in helping many people.

The family doctor needs to have more than a nodding acquaintance with this vast army of potential colleagues. He must know something of them all, and develop special skills and techniques in establishing good relations with them, and in working with them as a team. The development of team skills has received much less formal attention in general practice than it has in hospital medicine. A general practitioner should make use of everything and everyone who can help to modify his patient's environment for the better, or at least to mitigate some of the adverse factors in it; to marshal the resources of family and State in order to aid and rehabilitate the patient, and to reintegrate him into the community to which he belongs. A change in a patient's attitude to his social environment or personal relationships is needed far more often than a variation in blood chemistry by the use of drugs; but unfortunately such a change is often impossible, and then a person may need support, perhaps over many years, from his family doctor and the social services. In the development of these team skills the general practitioner can operate most effectively if he retains control and accepts the challenge of responsibility and leadership, taking it upon himself to introduce his patients and interpret their needs to his various helpers. Sometimes it is his duty to protect those under his care from a superfluity of opinions and advice.

Responsibility for mental health in this country, in future, will rest more and more on the general practitioner. A great deal remains to be done before he is skilled enough, and adequately equipped, to do the good work in this field of which he should be capable. There are encouraging signs already of a closer liaison, better understanding, and a new pattern of co-operation between him, his psychiatric specialist colleagues, and a great variety of social agencies. The development of this team-work in the National Health Service will ensure the best use of community resources which have, so far, been inadequately tapped.

## The Teaching of Psychological Medicine to all Family Doctors

### Undergraduate Training

To survey the present teaching of psychology and psychological medicine, the working party asked for information from all medical schools in the British Isles and from some in the Commonwealth. The response was prompt and generous; and, in addition to the information asked for, many correspondents gave helpful opinions on the ways in which the teaching of students could be improved. The answers revealed remarkable differences. In some schools as many as 20 lectures on psychology are given during each clinical course; in one it is not taught at all. One school provides as much as 66 hours of psychiatric lectures; in another the psychiatrist has stopped giving formal lectures because he considers that clinical demonstrations are better. Compulsory attendances at psychiatric out-patient departments vary from 0 to 20, and at teaching rounds on in-patients from 0 to 24. All medical schools provide demonstrations at mental hospitals, but the number of these varies from 4 to 12. Some schools arrange for students to live in for a while in a neurosis or mental-disease unit; it has been found that advantage is taken of this and that it is appreciated. Many teachers are pressing their universities or medical schools to increase the training of students in psychological medicine, and the medical curriculum is being reviewed with this in mind.

Several criticisms from medical teachers refer to the examination system. In the final examinations of some universities there are compulsory questions in psychological medicine, and a psychiatrist is among the examiners; in others there is, as yet, no compulsory question or psychiatric examiner. This has called forth protests: "I doubt whether students will ever take psychiatry seriously until it is a compulsory part of the final examination." "It is felt by the school council that attendance at psychology lectures should not be made compulsory, as it is not yet an examination subject." "The main future requirement is a compulsory question in psychiatry." Several teachers write of their desire to integrate psychological medicine with other subjects: "It would be much better and more effective if the student got these principles from everyone rather than from the specialist in psychological medicine." One teacher sums up a widespread opinion as follows: "If a third or more of all illness has its seat in the patient's mind, however somatically it be expressed . . . psychological medicine must be taught far more widely."

A grounding in the humanities while at school is of value in acquiring maturity and wisdom. In undergraduate teaching it is clear that greater emphasis needs to be placed on psychological medicine, and an outline of normal psychology should be part of every medical student's training alongside anatomy and physiology. The General Medical Council (1957) noted: "Instruction should be given in the elements of normal psychology. . . . It is desirable that the student should be given opportunities to learn something of the work of the general practitioner. During his study of all clinical subjects the attention of the student should be continuously directed by his teachers to the importance of the interrelation of the physical, psychological, and social aspects of disease. . . . Instruction should be given in the principles of Preventive Medicine, and on the influence of heredity and environment in the widest sense on health and disease. Where appropriate the various agencies established by local authorities as part of the Public Health and Social Welfare Services should be utilized for this purpose. Instruction in Psychological Medicine should be carried out mainly in a psychiatric department, where neuroses and psychoneuroses can be studied, and should include demonstrations at a Mental Hospital, and at a Mental Deficiency Institution."

Throughout hospital training no effort should be spared to teach students the human aspects of illness, and the importance of human relationships, to persuade them to view every patient as a sensitive person with whom they must establish direct contact. They must be taught the technique of listening—an art which can be learnt. Some students show an intuitive skill in handling patients, but they, too, need to be helped by careful instruction. A knowledge of psychological medicine should pervade all clinical teaching; and consultants in all departments must recognize the importance of emotional influences. Students must be taught not only about diseases and injuries but also about the individuals who suffer from them. Even a fractured femur should never be considered in front of students without some sincere attempt to assess the degree of psychological stress which the accident has imposed on the patient and his family. A considerable change of outlook towards psychological illness is already taking place among clinicians practising and teaching in our medical schools.

Consultants and specialists in teaching hospitals must find it difficult to appreciate the problems which arise during treatment of a patient at home, and the point of view of a family doctor, unless they have themselves worked for a while in general practice. There is much to be said for part of a student's introduction to patients to be against their home background, as in the student-attachment schemes which are now being developed by many medical schools (College of General Practitioners, 1957). Before a young doctor starts in practice he should know something about the social agencies which can help his psychological work, and how he can best contact them. A large proportion of the students who qualify enter general practice, and certain lectures on the management of psychological problems by family doctors could well be given by general practitioners interested in this subject; a list of such lectures has been drawn up. There is a limit to what an undergraduate can absorb in these matters, set by the limitations of his own experience of life. A young unmarried person cannot fully appreciate the problems of marriage, parenthood, and the interpersonal relationships arising from them. Sympathy in its true sense—the ability to feel with the patient—can sometimes be achieved only as the result of considerable personal experience of emotional difficulties. After a few years in general practice, young doctors are much better able to understand their patients' psychological troubles because they themselves have had to face up to comparable problems in their own lives.

### Postgraduate Training

All family doctors, young and old, should be given the opportunity to keep up to date with modern thought and teaching in this subject, and to fill gaps in their training. There are several ways of doing this. They can be encouraged to spend more time seeing their patients in consultation with more experienced general-practitioner colleagues and with psychiatric specialists, although it is appreciated that many of the latter prefer to interview patients alone. The division between hospital or institutional services for psychological illness and the services provided by general practitioners is too sharp; more consultations between family doctors and psychiatrists can be arranged as a potent means of mutual education. Doctors can read more medical journals and books on psychological medicine; there are increasing numbers of articles and monographs on this subject being published now. They can attend lectures, demonstrations, ward rounds, and refresher courses, such as those held at the Maudsley Hospital by the Institute of Psychiatry of the British Postgraduate Medical Federation of the University of London, and at the Uffculme Clinic in Birmingham. There are far too few courses of this kind. Members of the College report favourably on one in child and family psychiatry held for five days annually at the Ipswich and East Suffolk Hospital, and on those held at the Tavistock Clinic which are mentioned later. Another useful type of course for all family doctors is one in which consultant psychiatrists, general practitioners, and representatives of the social services discuss their problems together. Tape-recordings and films on this subject may in future help many doctors who work far from a teaching centre.

### Psychological Medicine in the Work of a General Practitioner with a Special Interest in this Subject

Only a small percentage of the psychological casualties seen in general practice are referred to psychiatric specialists; and yet the psychiatric services in this country are working to capacity, and nearly half the hospital beds are already taken up with patients needing custodial or other psychiatric care. This service can never handle all patients requiring psychological attention, and, indeed, this would be undesirable. In future, if the people in this country are to receive better psychological treatment there must either be a vast increase in the psychiatric services or family doctors must be encouraged and trained to treat, adequately, more of these patients.

Many general practitioners develop some special interest or skill which keeps them fresh and enthusiastic, and increases their value both to their patients and to their colleagues. Such special skills may be in the general-practice aspects of obstetrics, paediatrics, geriatrics, anaesthetics, minor surgery, dermatology, and so on. A family doctor with a special interest, training and experience in psychological medicine can often diagnose and treat the commoner of these disorders more quickly than can his colleagues. His technique is, first, an extension of the simple psychotherapy that all practising doctors make use of every day, which has already been discussed; later, he may have to investigate more thoroughly unresolved conflicts or difficulties. In the opinion of the working party the special techniques of psychoanalysis and other forms of analytical treatment, hypnotism, and convulsive therapy of all kinds are, at present, outside the normal province of general practice.

A general practitioner with an interest in psychological medicine can, by himself, treat many of the more severe forms of anxiety, depression, and hysterical states by making special arrangements for this work. Hopkins (1956) is of the opinion that six sessions of half to three-quarters of an hour, at weekly intervals, are enough for many such cases in his practice. In some group practices a doctor's colleagues are often only too glad of special advice on their problem cases, without surrendering responsibility for them.

A partner who has taken a special interest in any subject leavens the whole group, for the others learn constantly from him, which is good both for the partnership and for the patients. He is in a good position to introduce to a specialist's care those who need it, to smooth the path for those who have to be admitted into hospital, and to integrate in many other ways general practice with the psychiatric services. He can reduce pressure on hospital beds by keeping some of these patients at home; he can look after others when they leave hospital, and help them to get accustomed again to the outside world. He can treat many of the chronic mentally sick in their homes—those with epilepsy, senile dementia, arrested schizophrenia, and so on; both they and their relatives may need much moral support. He may practise preventive psychiatry throughout different phases of his patients' lives—as in pre-marriage counselling, marriage guidance, parent and child guidance, in giving advice on the problems of adolescence, and in the anticipation and management of psychological problems in maturity and old age. He may be able to help the psychiatric services more directly by filling, as part of his postgraduate training, clinical assistantships or other appointments in the out-patient departments of hospitals. He may also participate in research into psychological problems which affect general practice; a field which is largely unexplored and in which organized investigation is urgently needed.

As the skill and experience of these general practitioners with a special interest in psychological medicine increases, so will their awareness of their limitations; and it is most important that these be recognized. Such family doctors will understand the considerable help which many of their patients can receive from modern treatment given by an expert; and they will realize the risks they run in trying to treat certain groups of patients themselves. They will want to refer an increasing proportion of difficult cases to their psychiatric, neurological, general medical, or other consultant colleagues. Particular care must always be taken to exclude organic disease; and the significance of symptoms which usually suggest it must be appreciated even before physical signs develop. There is always the danger that a plausible cause for illness may be found in terms of emotional conflict, and treatment on these lines may be started, when serious organic trouble is brewing; valuable time is then lost in arriving at a full diagnosis. Nervous people are not immortal.

A family doctor with special skills in the recognition and treatment of psychological illness must always remain essentially a good all-round general practitioner. He should apply them only in the field of general practice; they should be kept under control and not become a source of irritation to patients or colleagues. Unnecessary psychological investigations, like irrelevant organic tests, invariably make for bad medicine.

#### What Training Would a General Practitioner with a Special Interest in Psychological Medicine Require?

Before going into general practice a doctor who is specially interested in psychological medicine should spend at least six months in a psychiatric centre or out-patient clinic, or in a hospital for nervous diseases, where he would learn early diagnosis of these conditions and the principles of modern psychological treatment, taking therapeutic responsibility himself for selected cases.

After he has entered general practice he should maintain and develop his special skill by keeping in touch, if possible, with other family doctors who are interested in this subject, and by being present at as many domiciliary consultations with psychiatrists as he can. He should attend some of the lectures, demonstrations, ward rounds, and refresher courses which have already been mentioned, and work (as a contribution towards his postgraduate training) in a local psychiatric out-patient clinic, or as clinical assistant or registrar in the psychiatric department of a hospital. He could also take part in an extended course, such as the seminars which are now being attended enthusiastically at the Tavistock Clinic (Balint, 1957), and also in Leeds and Ipswich; they are held on one half-day each week and continue for at least a year. The particular advantage of such courses is that family doctors discuss their own problem patients. There is already a demand in many parts of the country for more courses of this type.

#### How is a General Practitioner with a Special Interest in Psychological Medicine to be Enabled to do this work?

In private practice there is usually no difficulty. Such a general practitioner charges for his extra time and skill in proportion as they are called upon; if extra time has to be spent on a patient neither he nor the doctor need feel embarrassment. In the National Health Service, however, the matter is not so simple, because here, apart from the doctor and patient, a third party is concerned—the State. Many family doctors with a special interest and training in psychological medicine feel frustrated because of lack of time and adequate reward for doing this work properly. At present a general practitioner is paid nothing extra for undertaking time-consuming treatment of this kind. He can give himself the necessary time only by limiting the number of patients on his list, thereby restricting his income, or by taking it out of his leisure hours. This unsatisfactory state of affairs must react to the disadvantage of his patients.

### Summary

In this review of psychological medicine in general practice we have been impressed by the importance and size of the problem. We have suggested that this subject should be taught more thoroughly to all medical students, and that more opportunities for postgraduate training in it should be open to all general practitioners.

We have discussed how much of the family doctor's work is taken up by psychological disorders, many of them on the fringe of normality, and how well he is placed for their prevention, diagnosis, and management. We have pointed out how much good in this field every general practitioner can do himself, and on other occasions how much he and his patients benefit when he co-operates, in a team, with his many potential helpers from the social services. We have shown how advantageous it may be for a group of doctors to have one partner who, though still primarily in general practice, has been specially trained and experienced in this branch of medicine, and how much he can teach his colleagues. With increasing understanding by all general practitioners, and by the public, of the significance of anxiety and stress in health and disease, and with advances in knowledge and skill of succeeding generations of family doctors, the average standard of work in this field should be very much higher in twenty years' time than it is to-day.

### Recommendations

We recommend that:

1. In the undergraduate medical curriculum greater emphasis should be laid on normal psychology and on psychological medicine.

2. In qualifying examinations there should more often be a compulsory written question (or its equivalent in the clinical or oral) on the psychological aspect of medicine, and one of the examiners should be interested in this subject.

3. More postgraduate training of general practitioners in psychological medicine should be arranged in all areas.

4. In helping their patients with psychological illnesses more opportunities should be taken by family doctors to develop team-work with the ancillary services, to all of which they should have free access; and the Ministry of Health should give more encouragement, and assistance, towards linking general practice with the social services.

5. The Ministry of Health and other appropriate bodies should investigate the possibility of giving more opportunities, and recognition, to general practitioners with a special interest in psychological medicine who have had training and experience in it.

6. In the future development of the National Health Service the fundamental role of the general practitioner, in psychological medicine as in other branches of medicine, should be recognized.

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## THE PHYSICIAN AND HEALTH EDUCATION

BY

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The clinical situation, with its intimate doctor–patient relationship, is a peculiarly appropriate one for health education. Yet it is probably true to say that the physician has not adequately exploited his unusual educational opportunities. There are still far too many people who make relatively frequent use of their doctors but who remain with little knowledge and insight into their own states of health or those of their children. The numbers are legion indeed of those who have done little more than acquire a few esoteric terms to spice their conversations and impress their friends.

### The Patient's Viewpoint and Physician's Role

To consult his doctor is, on the part of the patient, usually a decision of surrender. Even with mild complaints he feels that he can no longer carry on alone. Under a threat to his security, his immediate need is not to think for himself but rather to confide in someone who will take over a responsibility he can no longer bear.

The greater his anxiety, the more receptive is he likely to be to an authority and decisiveness that offers to restore something of certainty and orderliness to his life. Thus, although in one sense he is highly susceptible to suggestion, he is also, paradoxically enough, rather ineducable because the fundamental understanding and insight that marks sound education is not what he primarily wants.

He is seeking essentially a short-cut solution to his problem. His dominating motive is to hand over his troubles to an expert in whom he has some measure of faith. But of this expert's hidden store of skills he has little comprehension, and within limits he is emotionally set for an uncritical acceptance of what he is told.

To this extent he is in psychological continuity with all the patients of medical history who have endowed their healers with magical powers.

The physician thus finds himself in a mould, pre-cast by his patients and by society, and he would be more than human if he did not find the proffered role somewhat tempting. Not only does he himself find it satisfying in the shortest possible time to establish an unequivocal diagnosis and a clear regimen, but it is certainly demanded by his patients.

The physician's conclusions may be medically quite valid, but while he retains too much of the aura of authority he limits more than he need the patient's understanding both of his diagnosis and of his therapy. The patient comes away with that mysterious justification for his future behaviour, both rational and irrational, significantly called "doctor's orders." Thus, once he has had his complaint labelled and has been told to take a tablet at certain times, to change his diet, or to rest more often, this may mean little more to him than the anxiety-relieving rituals of magic to a primitive.

Thus, with the physician in an active dominating role and the patient in a passive dependent one, we have a contradiction of the best educational situations where the learner actively and intelligently participates in solving his own problems and meeting his own needs.

Moreover, the somewhat undignified dependence of the patient often means that, as he recovers and his feeling of independence is restored, while gaining a greater respect for himself, he tends to lose it for his regimen. It is therefore not uncommon to find the patient, in his final stages of recovery, avoiding desirable contact with his doctor and neglecting the advice he received.

The result is that considerable numbers of patients resume their daily rounds as before, having received only a short didactic training in a limited mechanical procedure that has little meaning for them.

### Why Educate the Patient?

Of course, we may well ask why the patient should receive a broader guidance and education. After all, he presents a complaint to his doctor and at least his immediate need is met when this is ameliorated.

But it is hard to conceive even of a frankly curative service as being desirably concerned only with cures. Such a feat of purism would be difficult to defend. Curative services may begin with cures, but they surely should not end with them. They are intimately concerned with the future of the patient in respect both of the prevention of disease in the future as well as of the positive promotion of his health. In these respects, at least, the patient has a heavy personal responsibility which he cannot adequately fulfil without education.

Moreover, it is no longer possible for us to take refuge in a theory that with medical advances there shall be revealed more highly specific aetiologies that will enable the physician to treat and prevent disease through technical acts of extraordinary precision with less and less need for personal guidance of the patient.

It is a naive conception indeed that the function of science is primarily to simplify. On the contrary, its function of revealing new possibilities and of vastly complicating our vision of things is of at least equal importance. There is hardly room to-day for beliefs like those of Crookshank's (1920) ingenuous police surgeon, who declared that "bullets are the cause of war, as of murder."

In point of fact, recent advances in medicine have increased immeasurably the stature of emotional, behavioural, and social factors in the aetiology of disease and the maintenance of health. The vital role of human relationships; of emotional adjustment; of habits of sanitation, diet, smoking, drinking, sleep, work, rest, and exercise; of attitudes to and the use made of health and medical services—indeed, of the total pattern of the individual's daily life—has acquired a significance impossible to ignore.

The individual's personal influence on his own health is therefore of unusual importance. He can receive only limited help from the physician who remains narrowly preoccupied with the physical and biochemical aspects of disease and with the immediate technically expert acts he can perform on behalf of his patient. Such an approach misses one of the greatest potentialities of the clinical situation in guiding and educating the patient in his own care.

In the words of Delore (quoted by Mackintosh, 1953): "Over and above each technical act there is a corresponding educational function which doubles the value of the act, prolongs it, increases its efficiency and endows it with real human and social value."

It seems high time, then, that we take more vigorous action to fashion the physician's role in a form more consonant with his possible educational function.

### Desirable Steps

To achieve this end there are perhaps two major aspects of patient management that require attention. The first is the need for the physician to develop and exploit a more psychiatric type of relationship than is at present current. This would include greater opportunities for self-expression by the patient and consequently a more passive and permissive role for the doctor, in which his interventions were not only explanatory but suggestive and co-operative rather than didactic and authoritarian. In such a clinical context his guidance could be more closely related to the felt and expressed needs of his patient. This would enable him to build on the essential foundation of the patient's interpretation of his own problem and not so much on a discrete medical interpretation meaningful only to himself. It would enable him to adapt his guidance more easily to the individual patient's peculiar habits, attitudes, feelings, and knowledge as well as to the particular degree of that patient's emotional rigidity and resistance to change.

Secondly, the physician should be more actively aware of the need to salvage the patient's capacity for independence and to build up his self-reliance and confidence. This is not to say that when the patient appeals for help the physician should throw him back on his own resources, but rather that as early as possible the physician should encourage the patient to feel that he has control over his own destiny and that he has an intelligent role to play in his treatment and in the future care of his own health.

It is in such a context that the patient may be given information to the extent that his motivation and understanding permits—which is somewhat further than most doctors are inclined to assume for most patients. This is, of course, not an entirely easy proposition, for what profession is there whose public prestige is more enhanced by the full-dress regalia of its technical jargon? Indeed, it is probably a need of most physicians that they learn to express medical principles in terms which are both accurate and comprehensible to the increasingly well-educated public of modern times.

If these suggestions are valid it is apparent that the problem of educating the patient is not a matter of simple accretion of an extra element, but rather of a reorientation of the whole clinical situation and of the doctor–patient relationship.

### Possible Objections

There are naturally certain objections which may be raised. It might, for example, be said that the busy medical practitioner is at present hard pressed enough—too hard pressed, perhaps—to give each of his patients sufficient time. He would therefore be unlikely to welcome the introduction of procedures which may considerably lengthen his clinical contact with the patient.

To counter this it may not be unreasonable to claim that in many practices short-term palliative treatment, on the one hand, and pressure from numbers of patients whose care and guidance have not been thorough enough in the past on the other, are parts of the same vicious circle.

But even if this was not wholly true, the fact remains that education and guidance techniques are clinical skills like any others. As such they require careful teaching and considerable experience. While the application of the principles by a beginner may appreciably lengthen his clinical contacts, we have no reliable estimate of the short-term, let alone the long-term, implications for time, once the practitioner is really skilled.

Each physician must remain the judge of what he can best do under the circumstances and demands of his practice. In the last resort, however, there is no blinking the fact that some balance (in spite of periodic changes in the centre of gravity) must be found between the needs of time economy and the needs of optimal medical efficiency.

Another objection might be that education of the patient frequently means giving him information which he will misinterpret or which may affect his clinical condition adversely. It is quite obvious that this again is a matter to be decided by the physician with each patient, and is a vital and intrinsic part of his clinical judgment. But in the long run it is hard to defend the withholding of information outside of the exceptional case. Quite apart

from the critical question of whether it is morally defensible, there are essentially practical reasons.

To-day, when people have reached an unprecedented level of literacy and education, and have an almost unlimited access to a wide variety of sources of information about health and disease, this whole objection loses force. Whether we like it or not, patients are going to have their questions answered with varying degrees of accuracy by friends and relatives, by quacks of all kinds, by articles in newspapers and popular magazines, and by commercial advertisements.

It is therefore clearly in the interest both of the physician and of his patient that the latter should not leave his doctor with questions he would like to have asked but did not, or with answers that did not satisfy him. It seems an elementary insistence that the patient is entitled to know all his doctor can tell him and that his doctor is the best person to tell him.

### Medical Education

The ultimate solution of the problem, as of many others affecting modern medicine, probably lies in the field of basic medical education. There is to-day a clearly discernible increase in appreciation of the fundamental need of medicine to be systematically moulded into a more human and social discipline and to widen its interest in diseases to include the people and communities that suffer from them.

Medical education may, after all, be designed to produce physicians who not only have the technical knowledge and skills of their craft, who not only see health and disease as a by-product of personal and social life, but who are at once humane and imaginative educators as well.

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# SOME POPULAR BELIEFS CONCERNING THE CAUSES OF CANCER

BY

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It is difficult to assess with any precision the present balance of medical opinion on the value of cancer education. A questionary circulated a few years ago by the British Empire Cancer Campaign drew replies from only one-quarter of the general practitioners to whom it was addressed, and of these slightly more than half expressed opposition to education of the public concerning cancer (Horder, 1953). More recently, however, it has been shown (Wakefield and Davison, 1958) that a carefully conducted local programme of cancer education can in practice gain the widespread approval of general practitioners. At the same time, the increasing volume of evidence tending to incriminate cigarette smoking as a major factor in the aetiology of cancer of the lung has stimulated the interest of many medical practitioners in the possibilities of education or propagandist activities directed towards a reduction in the incidence of what would appear to be an eminently preventable disease.

The planning of health education in this field, if its desirability be accepted, is likely to be the more effective if it takes account of the prevailing patterns of belief and habit in the community. In this context, the findings of a recent inquiry, which throw some light on lay beliefs concerning the causes of cancer, with particular reference to the role of cigarette smoking, may perhaps be of interest.

The data presented here were obtained through interviews with a random sample of the adult population of the City of Edinburgh. The background of the inquiry, the sampling procedure, and the response rate have been described elsewhere (Cartwright, Martin, and Thomson, 1958). The inquiry was primarily concerned with popular beliefs concerning tuberculosis, but certain questions about cancer were included in the interview.

### General Attitudes Concerning Cancer

Some indication of popular fears of cancer in comparison with other diseases is provided by replies to the opening questions of the interview, in which our subjects were asked what illness they thought was most dangerous for children under the age of 15, for adults under the age of 45, and for adults over that age. Only one person in a hundred mentioned cancer as the most dangerous disease for children, but a quarter and a third respectively thought it was the most dangerous illness for adults below and above the age of 45. In each of these last two groups cancer was the second most frequently mentioned disease; tuberculosis (29%) was specified slightly more frequently for younger, and heart disease (34%) slightly more frequently for older, adults.

There were, however, no indications, at any rate at the level of conscious awareness, of a widespread incidence of what is sometimes referred to as cancerphobia. Less than one-third of the people questioned said in reply to a specific inquiry that they were worried about their own health or the health of any member of their family, and of these the majority were concerned about some illness present at the time. Among those who expressed anxiety about an illness not actually present cancer was the disease most frequently mentioned, but even this was named only by one person in fifty.

When asked which of five selected causes of death was responsible for the greatest number of deaths, 35% of our subjects said heart disease, 32% street accidents, and 27% cancer. Only 5% cited lung tuberculosis and 1% poliomyelitis. Cancer was much more often specified by women (35%) than by men (18%). Asked to estimate whether death or recovery was the more probable outcome in each of the four diseases included in the previous list, the members of our sample were least optimistic about the prognosis for the cancer patient, with three-quarters thinking death the more likely outcome. One subject in five, however, thought that a person who had contracted cancer was more likely to recover than to die.

A somewhat higher proportion, nearly one-third, said they would rather not know if they had cancer, even though, in answer to a later question, only 9% thought the chances of recovery were not improved by early diagnosis. For lung tuberculosis people were apparently more convinced of the value of early diagnosis; only 2% thought it would not improve the chances of recovery, and only one in ten said they would rather not know if they had it.

### Beliefs About the Causes of Cancer

In an attempt to discover the pattern of popular beliefs about the causes of cancer, we first asked a general question in which we did not suggest any possible cause. Replies have been classified into various groups in Table I.

The cause most frequently suggested was knocks, bumps, or bruises; then in descending order of frequency came smoking; air pollution, fumes or dirt; inheritance; and tiredness, worry, overstrain, or frustration. The popularity of the belief that trivial injuries may cause cancer provides an interesting example of the psychological process referred

TABLE I.—*Causes to Which Cancer is Attributed*

| | |
|---|---|
| Knocks/bumps/bruises | 25% |
| Smoking | 22% |
| Air pollution/fumes/dirt | 14% |
| Inheritance from parents | 8% |
| Tiredness worry/overstrain/frustration | 4% |
| Replies connected with food | 4% |
| Infection | 1% |
| Others | 19% |
| No opinion | 34% |
| Sample | 554=100% |

to elsewhere as "reduction to the familiar" (Cartwright *et al.*, 1958)—the tendency to relate the aetiology of major diseases to simple, everyday conditions; a parallel and even more widely held belief is that tuberculosis develops from neglected colds.

Only 1% of those questioned spontaneously mentioned infection as a "cause" of cancer, but when asked specifically about this another 12% said they thought it was possible to "catch cancer from other people." Rather similar questions were asked about the inheritance of cancer. This had already been mentioned spontaneously by 8%, and another 25% replied positively when asked about this specifically; one-third of these gave unqualified replies, and the remainder said that they thought a tendency to contract cancer could be inherited.

Members of the sample who had not previously mentioned smoking were asked whether they had heard that some doctors and scientists thought that people who smoked were more likely to get cancer than people who did not smoke; they were then asked their own opinion. The results are shown in Table II. Although most people had heard of the relationship, more than one-third of them thought that smokers were not more likely to contract cancer than non-smokers.

TABLE II.—*Beliefs of 554 Persons About Smoking as a Cause of Cancer*

| | | | |
|---|---|---|---|
| Smoking mentioned spontaneously as a cause | | | 22% |
| Has heard of possible relationship | | 75% | 78% |
| Has *not* heard of possible relationship | | 3% | |
| Thought smokers more likely to contract cancer | When asked specifically | 30% | 78% |
| Thought smokers *not* more likely to contract cancer | | 36% | |
| No opinion | | 12% | |

### Variation in Beliefs with Age, Sex, and Social Class of the Individual

Appreciably more men than women mentioned air pollution, fumes, or dirt as a cause of cancer (22% against 8%), and slightly more men than women mentioned smoking spontaneously. However, when they were asked specifically about smoking the proportion of men who thought smokers were not more likely to get cancer than non-smokers was 41% compared with 32% for women. Rather more women than men mentioned knocks as a cause of cancer (28% compared with 22%).

When we consider variations with age we find that the proportion suggesting knocks as a cause of cancer increases with the age of the person, rising from 18% for those aged 21–34 to 33% for those aged 65 or more. In contrast the proportion mentioning air pollution declines with age. The proportion thinking smoking, inheritance, or infection a cause of cancer when they were asked about these factors specifically was highest for the people over 65—probably because this group is the most willing to accept suggestions of this sort uncritically.

Social class variations reveal surprisingly few differences. The proportion mentioning knocks is lowest for those in professional and intermediate occupations (17%) and highest for those in unskilled manual jobs, but no consistent variation can be observed when we consider smoking as a cause of cancer, and there is little variation in the proportion mentioning air pollution, fumes, or dirt.

### Smoking Habits and their Relation to Beliefs on Smoking as a Cause of Cancer

The proportion spontaneously mentioning smoking as a cause of cancer did not vary significantly between smokers, non-smokers, and people who had given up smoking; neither did the proportion who had heard of the relationship. However, when we asked people who had not mentioned smoking as a possible cause of cancer what they thought about the theory striking differences emerged.

Nearly half the people now smoking said they did not believe that smokers were more likely to get cancer than non-smokers. This was more than twice as high as the proportion of non-smokers who held this view. It might have been expected that the people who had given up smoking

TABLE III.—*Relationship Between Smoking Habits and Beliefs About Smoking as a Cause of Cancer*

| | Smoke Now | | | Given up Smoking | Never Smoked |
|---|---|---|---|---|---|
| | 20 a Day or More | Less than 20 | All those Smoking Now* | | |
| | % | % | % | % | % |
| Smoking mentioned spontaneously as a cause | 24 | 23 | 23 | 18 | 22 |
| Had heard of possible relationship | 72 | 74 | 73 | 81 | 75 |
| | 76 | 77 | 77 | 82 | 78 |
| Had not heard of possible relationship | 4 | 3 | 4 | 1 | 3 |
| Thought smokers more likely to get cancer (When asked specifically) | 17 | 25 | 22 | 38 | 40 |
| | 76 | 77 | 77 | 82 | 78 |
| Thought smokers not more likely to get cancer (When asked specifically) | 51 | 45 | 47 | 32 | 21 |
| Don't know (When asked specifically) | 8 | 7 | 8 | 12 | 17 |
| No. of individuals=100% | 109 | 164 | 288 | 76 | 187 |

* Including 10 pipe smokers and 5 people for whom the quantity was not known.

were those who believed most firmly in the relationship, but in fact this group fell in between the smokers and non-smokers in this respect. The reasons of 76 persons for giving up smoking were then examined. These were: expense, 39%; health reasons, 37%; others, 20%; no answers, 4%. Expense and health were the reasons most frequently put forward for giving up smoking, but when the beliefs about smoking as a cause of cancer are examined for the small group of 28 people who gave up smoking for health reasons we find no significant differences between them and the other members of our sample.

The absence of any relationship becomes clearer when the health reasons in question are examined in detail. Only 2 of the 28 individuals concerned had given up smoking because of a fear of cancer; this may be compared with 14 who gave up smoking as a result of major or minor respiratory conditions, 3 because of gastric illnesses, and another 2 with cardiac conditions. It is evident that even among those who claim to have given up smoking for health reasons fear of cancer of the lung has played a very small part.

### Conclusions

It is clear that smoking is now quite widely believed to be a cause of cancer. In an inquiry conducted in the Manchester area four years before our own (Paterson and Aitken-Swan, 1954), only 2% of those questioned spoke spontaneously of smoking when asked about the causes of cancer. By 1957 the corresponding percentage among the Edinburgh population had risen to 22, and when asked specifically another 30% agreed that smoking was a possible cause. It would seem that recent suggestions, in Parliament and elsewhere, that the Government should give widespread publicity to the association between lung cancer and cigarette smoking may be misconceived, since only three people in a hundred were not aware that such a relationship had been asserted. The problem is not so much one of knowledge as of conviction and action, and our findings demonstrate once again the fallacy of the Socratic assumption that underlies much health education.

Heavy smokers, though they were as likely as anyone else to know that an association between smoking and lung cancer had been postulated, were far more ready than non-smokers to deny the validity of the evidence. In short, their

expressed beliefs were largely a rationalization of their habits, while those who had never taken up smoking were correspondingly more prepared to attribute harmful effects to the cigarette. But if there is a gap between knowledge and belief there is also a gap between belief and action, for it is noteworthy that two-fifths even of the heavy smokers were prepared to accept the proposition that smokers ran a greater risk of contracting lung cancer. Among the motives of those who had given up smoking, fear of cancer played an insignificant part. To base one's beliefs on one's habits, rather than the reverse, is a characteristic not restricted to laymen. Pyke (1955) has shown that medical practitioners are no less irrational in their assessment of the evidence in question: 71% of non-smoking doctors were satisfied with the evidence linking cigarette smoking with carcinoma of the bronchus, but only 46% of the doctors who smoked cigarettes thought the evidence adequate.

The logic of the individual in our sample who said that if doctors believed in the association they would give up smoking, seems somewhat unjustified.

Public action directed towards the reduction of cigarette smoking may take one of two major forms. The first of these is the introduction of deterrents, of which the most obvious would be a further heavy increase in the excise duty on cigarette tobacco; this would probably have some effect, since the number of people who give up smoking on grounds of expense is already greater than the number who give it up for health reasons of any kind; but its precise effect would depend not only on the extent of the increase but also on future trends in income levels and in the relative attractiveness of alternative objects of expenditure. The other possible approach is educational. It is obvious that a mere exposition of facts is unlikely to be effective in persuading confirmed smokers to give up the habit, though it may dissuade some young people forming the habit. It seems to us that if educational activity is to be effective it must be based upon direct study of the habit of cigarette smoking—of the processes by which it takes root, the satisfaction which it yields, and the difficulty of giving it up. This is a subject on which we are aware of a number of hypotheses, but of little objective evidence.

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# ATTITUDES OF THE GENERAL PUBLIC TO MENTAL ILLNESS

BY

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Although it is very likely that the attitudes of members of the general public towards mental illnesses have an important bearing upon the recognition and treatment of these conditions, few systematic investigations of such attitudes have been carried out, and all of these in the United States of America or Canada (Ramsey and Seipp, 1948; Roper, 1950; Woodward, 1951; Star, 1952; Cumming, 1955; Redlich *et al.*, 1955). Recently an opportunity presented itself to make some similar observations in this country.

In January, 1957, the B.B.C. broadcast a series of five television programmes under the general title of the "Hurt Mind" which dealt with various problems connected with the aetiology, nature, and treatment of mental illness. Each of the broadcasts in the series was seen by approximately 15% of the adult population in the United Kingdom, equivalent to about 5½ million people. An attempt was made to measure some of the change in attitudes of the viewing public which could be attributed to seeing the programmes. The results have been reviewed by Dr. W. A. Belson, of the B.B.C. Audience Research Department, who found that a great majority of viewers drew a distinction between mental illness and insanity; many were unwilling to accept the ex-patient in certain occupational and other roles, and there was a general feeling that mental illness was something to keep quiet about. Little change was brought about in viewers' opinions in these respects. However, the series "increased somewhat viewers' knowledge on the subject of mental illness, especially in respect of methods of treatment. There was a moderate but broadly based increase in viewers' confidence in the ability of medical men to cure mental illness. . . . There was a small but well-spread increase in the viewers' willingness to associate with the ex-patient. . . ." (Belson, 1957).

When the "Hurt Mind" series was in preparation a preliminary survey of the "target audience" for these programmes was made. Groups of viewers, drawn from the Greater London area, were invited to Broadcasting House and there asked to fill in a written questionary, to ascertain their ideas about mental illness and its treatment, and their attitudes towards the mentally ill. One hundred and eighty people were involved, but this number was reduced to 167 in order to match the viewing public of Greater London in terms of a social level and age. This material was kindly made available to us by the B.B.C., who also permitted us to carry out a content-analysis of 1,267 letters written to the B.B.C. by viewers in response to the "Hurt Mind" programmes.

## I. Spontaneous Opinions About Mental Illness

At the onset of the preliminary inquiry the 167 volunteers were asked to write as fully as possible what they understood by the expression, "A person who is mentally ill." The following content-analysis is based upon the answers to this question.

*Major Diagnostic Categories.*—Seventy-two persons seemed to be describing a psychiatric condition only, and 24 a neurosis or personality disorder only, while 23 seemed to have both in mind when thinking of mental illness. Of those whose answers were classifiable in this way, 80% mentioned psychotic traits or syndromes in their answers, and 40% mentioned neuroses. Only four answers seemed to describe mental deficiency.

*Topics most frequently mentioned.*—Each answer was then broken down into a series of separate statements. The most popular single item was an expression of general good will such as "needs much help, understanding, and kindness." Forty-five individuals (27%) replied in this way. Other fairly popular responses (mentioned by more than 20 people) were: "Due to worry, mental strain," etc.; "Sometimes violent"; "Needs to be supervised in an institution"; "Behaves or reacts abnormally"; "Pessimistic, depressed," etc. There were 665 separate items, of which 572 could broadly be classified under the headings Descriptive, Aetiological, and Therapeutic.

*Descriptive Items.*—The 301 descriptive items could be further sorted into five "syndromes" which accounted for 260 of them. The largest "syndrome," accounting for

over half the descriptive items, was composed of items describing the conventional "madman" who had difficulty in thinking logically (46 items), was unpredictable in behaviour (58 items), was withdrawn (24 items), and was paranoid (21 items) or suffered from other delusions (10 items). The other "syndromes" were depression (e.g., "morose," "hopeless," etc., 33 items), anxiety (e.g., "worries unduly," 34 items), social maladjustment (e.g., "can't mix," 27 items), and socially deviant behaviour (e.g., "antisocial," "criminal," 7 items).

*Aetiological items.*—The 154 aetiological items could be divided into 12% "organic" (e.g., "brain diseased or damaged"), 9% "constitutional" (e.g., "inherited," "not strong enough"), and 79% "environmental." The latter could be subdivided into general (e.g., "due to worry, circumstances of life," etc.) and more specific, such as "due to financial difficulty," etc. Very few people spontaneously remarked that mental illness was due to treatment as a child or connected it with personality development.

*Therapeutic Items.*—These were 117 items dealing chiefly with the need of the mentally ill person for treatment. Sixty-three items were concerned with unspecified "psychological treatment (good will, kindness, etc.). Seventeen specified rest or psychotherapy. Institutionalization and supervision were suggested in 20 items, and one of the physical treatments in 7.

*Minority views.*—Certain responses were not as much in evidence as might perhaps have been expected. Moral considerations were introduced in only two answers, and only six mentioned "unnatural cravings." Only one person mentioned malingering. Nineteen wrote about fear or horror of the mentally ill; 11 of them described this in themselves, 8 of them in other people, adding that it was unjustified.

To summarize, in these spontaneous answers 167 people—thought to be representative of the viewing public of Greater London—indicated what the words "a person who is mentally ill" meant to them. They seemed to think primarily of the traditional "madman," who could not think logically and was unpredictable, deluded, and withdrawn. Depressive, neurotic, and personality disorders were much less frequently mentioned. Aetiology was conceived mainly in terms of general or specific life stresses beginning in the recent past, with little mention of physical or hereditary causation. Therapy, similarly, was thought to consist of unspecific measures such as rest and kindness; the nature of psychotherapy was almost certainly not understood, and physical treatments were hardly mentioned.

## II. Letters Written in Response to the "Hurt Mind" Programmes

An examination of the 1,267 letters written to the B.B.C. by viewers of this series provided some indication of the topics about which patients and their relatives expressed concern. Less than half of these letters complied with the invitation to submit questions which might be answered in a final programme; many of them consisted partly, or entirely, in an unburdening of the writer's own experiences and emotions. Several writers expressed their thanks for the evidence given by these programmes that *someone* was interested in their problems, and appeared to regard the act of writing to the B.B.C. as being in itself helpful to them. As might be expected, quite a number of the letters (approximately 20%) were written by persons who were themselves suffering from some form of mental disorder, but in only six instances were the contents of the letters dictated exclusively by delusions arising from the illness itself.

Of the total, 730 were from women, 372 from men; in 165 cases the sex of the writer was not indicated. This 2/1 sex ratio was shown in every topic studied in the content-analysis except three. The inequality was much less marked in letters concerning organic complaints (stroke, tinnitus, etc.), and in two instances (questions about legal formalities and about rehabilitation after mental illness) the men outnumbered the women.

In all, 1,842 topics were identified in the analysis. These could be categorized under the following main headings.

### Requests for Further Information (mentioned in 526 letters)

This category includes all those letters which complied with the broadcast invitation to submit questions which could be answered on the air. The majority asked for more facts (and in some cases expressed disagreement) about matters touched on in the early programmes; some asked for the titles of good books on psychiatry. *Heredity* was the subject of surprisingly few inquiries (17 in all). Other forms of *aetiology* were mentioned in 23 letters, of which 13 discussed environmental influences and only 7 implied a belief in organic causes. Three writers asked if there is any foundation for popular beliefs about the influence of the moon. Only two persons explicitly asked about the relationship between neurosis and insanity. Five letters, all written by women, requested more discussion of the bearing of religion on mental illness.

### Requests for Advice About Treatment (554 letters)

Many letters contained requests for help in dealing with a current illness of the writer or of someone in his or her household. Some of these described problems of such urgency that the producer of the television series passed 314 of them on to the National Association for Mental Health for their immediate attention.

It was possible in 91% of these letters to make a fairly confident guess at the diagnosis of the conditions described. Cases of neurotic illness (including character disorders and psychopathy) were described most frequently (202 letters), psychoses somewhat less (175), and mental illnesses with an organic basis considerably less often (128). These overall ratios were, however, very different when one contrasted letters describing the writer's own case with those describing illness in other people. In the former letters neuroses predominated, whereas in the latter cases of psychosis and organic illness were each twice as common as neuroses. It appears from this analysis that, whereas neurotic patients are readily able to express the need they feel for treatment, it is the *relatives* of psychotic and organically ill patients who are more likely to seek help on their behalf. It can be assumed that neurotic patients are more likely to have insight into their conditions: but these letters give the additional piece of information that in relatively few instances were correspondents concerned about neurotic illness in other members of the family.

In addition to asking what can be done in general for their sick relatives, 55 correspondents wanted to know what they personally could do to help them. In 29 of these instances the patient had refused to accept treatment, or to see a doctor, thus intensifying the relative's feeling of responsibility. Two persons described suicide in near relatives and wondered in retrospect what they might have done to avert this.

### Unorthodox Methods of Treatment (21 letters)

Some of the letters received were concerned to impart information rather than to ask for it. This was particularly true of the writers who advocated unusual lines of treatment, such as biotherapy, scientology, "abintranosis," and "Dr. Croften's virus injections." The only one of such treatments which received support from more than one correspondent was *spiritualism*: 14 letters argued vehemently in favour of the healing powers of mediums and clairvoyants, three of the writers going on to explain that mental illnesses could most fruitfully be treated by exorcism.

### Treatment in the Community (72 letters)

Concern about the presence of a mental patient in the household was often expressed. One woman wrote: "Surely the passage from skilled hands to total incompre-

hension from the family is a strain on the patient." Others dwelt upon the distress experienced by other members of the patient's family: "It is worse for the relatives of sick people, they have to face reality and cannot retire into the 'other world'." A woman whose husband has epileptic fits described herself as living "in awful perpetual dread of a seizure"; another with a severely disturbed epileptic child wrote, "She is ruining my health." One mother complained of her schizophrenic daughter: "She behaves just like a naughty child"; and another, in despair at her son's seemingly intractable psychosis, comes to the conclusion: "I feel that it would be more humane to put him to sleep, out of his misery."

In the great majority of cases, however, the relatives' concern was focused upon the patient's welfare after he or she had left mental hospital: and of those who raised the topic of treatment, no fewer than 39 (54%) said there is not enough aftercare provision. They also criticized treatment at psychiatric out-patient clinics, with comments such as: "One has a long wait in the out-patient department, and then a very cursory interview," or the recurrent complaint: "The psychiatrist just gave me pills which doped me." Individual writers made positive suggestions for extending the work of ex-patients' clubs and of occupation centres. One woman suggested: "Wouldn't it be better for patients to stay at work, living in a night hospital or a hostel if necessary?" Several writers made the point that the benefits of recovery in hospital could be lost if the patient were not helped to find suitable employment: six of these described instances where the ex-patient encountered the additional obstacle of prejudice instead of help in seeking work.

#### Stigma of Mental Illness (56 letters)

Patients and their relatives wrote with feeling about popular prejudice against those who have been mentally ill. Thus one woman, whose husband had suffered a depressive illness and thereafter could not find work, wrote: "The stigma of mental trouble is most damaging, and I begin to wonder if a man who has been to prison for some crime is certainly no worse off." A husband whose wife was severely depressed believed that her condition was aggravated by the attitude of their neighbours, who "said she was not safe to be with as she was a mental case." An ex-patient complained: "People make you feel you are not safe to be around." The parent of a mentally defective child pointed out that in his opinion this prejudice is apparent in the terminology of the law relating to mental defect. He wrote: "*Mental defective* is itself used almost as a term of abuse. Also 'on licence' and 'absconding' are terms suggesting a criminal aspect."

Three letters cited cases where members of the family themselves showed an unhelpful attitude towards a convalescent mental patient. It was implied that they should have known better; this implication was also evident in some bitter criticisms of the attitude of the patients' general practitioners.

#### General Practitioners (96 letters)

The practitioners' attitude to psychiatric illness, and their seeming powerlessness to help, were emphasized by both relatives and patients (but especially the latter). Doctors were accused of having no time for this type of patient, either literally or figuratively: "Doctors are always in a rush, haven't time to bother with you. Write you a prescription and say—Sorry, but it's not physical, it's yourself." "The doctor who I am under gives me sleeping-tablets; says he can do nothing else." "My doctor, who is a busy man, just gives me nerve tonics." "Our doctor hasn't much practice or understanding of this kind of thing: my husband has had thousands of tranquillizers and takes sleeping-tablets every night."

A woman patient wrote: "I have been to my doctor, but he just keeps giving me pills—they are too busy to talk"; and another complained that her doctor "always puts me off, tells me I must help myself, and gives me pills" (chlorpromazine). A man wrote: "Works doctors do not understand about psychiatric illness"; and another: "I could go to my G.P., but what would be the use, as he does not know anything about this kind of illness?"

There is therefore among those who sent in letters to the B.B.C. a widespread opinion that general practitioners prescribe too many sedatives, and are disinclined or unable to give psychiatric patients the amount or type of attention which the latter think they need. In some cases patients said they were afraid to consult their doctors—for example, "A very harassed doctor gave me a brusque interview. He was quite scornful, told me to get a man"; and another wrote that she was reluctant to mention her symptoms to her G.P. again "in case I get another rebuff." Yet another wrote plaintively: "My doctor tells me I have got to overcome this myself, and I just do not seem able to do it."

Many writers, while complaining of their doctor's inability to help them, expressed gratitude for his attentions in other illnesses and sympathized with his heavy burden of work; but expressed the belief that most doctors neither understood nor sympathized with mental illness. Three writers urged that more attention should be given to teaching psychological medicine to doctors in training. On the other hand, a general practitioner wrote that in his opinion a great many minor neuroses respond to a brisk admonition to "pull yourself together."

#### Complaints About Hospitals (154 letters)

The large number of these letters implied considerable public dissatisfaction with the present state of the mental health services. Here the content of the first three television broadcasts especially provoked viewers' comments. The designers of the programme were anxious to put across a positive and optimistic picture of the work of mental hospitals and clinics; but as a result many people wrote to say that *their* experience had been very different. Surprisingly few letters came from patients currently in mental hospital, perhaps because it is in only a few institutions that patients are permitted to watch television programmes later than 10 p.m. (as were all of this series). In this category letters from relatives or friends were much more numerous than those from present or former patients (78% as against 22%).

The principal grounds for complaint were the lack of amenities in patients' surroundings and in their dress. Six writers laid particular stress on locked doors, which, as one put it, make the hospital "grim and prison-like." Seven letters made especial complaint of patients being left in idleness. One writer stressed both of these points: "Lots of mothers think the same as me; they should not be locked up. They will never get better like that, to sit about all day long watching each other. . . . Will you please take the matter up, about locking the patients in because they are afraid they might run away.

There were several complaints about overcrowding and about the mixing together of patients of widely different ages and degrees of severity of illness. Five letters mentioned brutal or harshly inconsiderate treatment by nurses. Another recurrent theme was the failure of doctors to give relatives the information they sought about patients in hospital. A patient's daughter paid a backhand compliment when she wrote: "My experience with the medical superintendent leads me to suppose that the one interviewed by Christopher Mayhew last night is a rarity."

Among the nine letters about institutions for mental defectives, four contained complaints about difficulties and delays in getting patients admitted, and three complained even more bitterly about obstruction of their efforts to have their relatives discharged.

#### In Praise of Mental Hospitals (24 letters)

After so much adverse criticism, it was a relief to find that there were a few writers who spoke with appreciation of hospitals and their staffs. One woman described the harrowing experience of trying to cope with her acutely

paranoid husband for some days before his admission to hospital: "I never want to live through that again . . . thank God there are such places." Only one person, a mother, spontaneously praised a mental deficiency institution; she said that her mongol boy was doing very well in "a splendid home where they work wonders."

#### Offers of Help for the Mentally Ill (26 letters)

Two writers proposed that volunteers should be invited to "adopt" and take a personal interest in neglected patients. Three others offered forthwith to entertain such patients in their homes. Two writers sent donations for mental health work, and four others described ways in which they were already befriending hospital patients; the remainder expressed their readiness to help if someone would advise them how they could best do so.

#### Questions About Formal Procedure (36 letters)

These letters were very varied in content, the only recurrent theme being requests for guidance on how to bring about the discharge of certified relatives (mentioned explicitly in six letters, and implied in a number of others). The remainder concerned questions of property and civil rights of the mentally ill. Two men wrote questioning the competence of the ordinary medical practitioner to sign certificates of unsoundness of mind; on the other hand, a woman J. P. and another correspondent wrote in favour of the fairness of the present certification procedure.

#### Organic Conditions (30 letters)

A number of correspondents wrote about conditions of medical rather than psychiatric concern, although the after-effects of a stroke (mentioned in 10 letters) may often include some mental impairment. Conditions such as myasthenia gravis, myopathy, tinnitus, and chorea had evidently been described to patients as disorders of the nervous system, and were misinterpreted as instances of "nerves." In contrast, two other letters (included in the first category above) were from relatives of melancholic patients who asked if it were true that in such cases "the depression nerve" is particularly affected.

#### Maternal Deprivation (7 letters)

In view of the widespread interest and discussion among mental-health workers of Dr. Bowlby's contentions about the lasting ill-effects of maternal deprivation in early childhood, all references to this subject were separately noted. It is evident, however, that this controversy does not appear to have made much impression upon the television-viewing public. Among those who expressed concern about the possible harmful effects of separation were a mother and a father who sought guidance about whether they should send their children (age 5 and 12) to an epileptic colony and to a residential school for blind children, respectively.

#### Miscellaneous (217 letters)

These letters ranged over a wide variety of topics, including euthanasia, the efficacy of prayer, the need for more pay for mental nurses, the law on divorce, and the question of suicide. In this category were included the few frankly psychotic letters, and several from less-disturbed patients who described their sense of isolation and their difficulty in communicating their feelings. A depressed married woman wrote: "Every time I look at my local newspaper I am shown the easy way. Should the Press print all the suicides? It cannot help the unbalanced." Another said: "The doctors on the T.V. programme all made it sound so easy to get well," and a third, still more depressed, expostulated: "Why don't doctors tell the truth; there is no cure, only a bullet through the brain." Included in this miscellany were five letters protesting against the entire series of programmes, 12 complaining about the rather horrific faces which introduced the first broadcast, and three expressions of thanks to the organizers of the programmes for directing public interest and sympathy towards this problem.

## Discussion

The term "mental illness" is used by psychiatrists to cover a wide range of conditions, from frank psychoses to neuroses and minor personality disorders. The American studies have shown that in general it is the more severe disturbances which are popularly classed under this heading: milder emotional abnormalities are regarded as closely akin to everyday behaviour. The first part of the present analysis confirms this tendency in the London sample: for them, too, "mental illness" has become the accepted euphemism for insanity, whereas the milder forms of neurosis have not yet been generally recognized as illness.

This indifference to neurotic illness is not shared by the sufferers themselves, as was shown by the letters to the B.B.C. Such patients, and their relatives, strongly deplored the seeming reluctance of other members of the public, and especially of doctors, to treat them with the consideration and the specialized attention which they felt they needed. Here the limitations of this particular self-selected sample must be borne in mind. Those who wrote to the B.B.C. were moved to do so, in many cases, by pressing current needs, or by a lingering resentment against real or imagined mistreatment; this may account for the volume of criticisms against the doctors and hospitals. Psychiatrists by no means escaped criticism either, in spite of (or perhaps because of) the fact that the programmes were given a decidedly optimistic bias.

There is inevitably an uncontrolled bias in these samples, more especially in the case of the letters to the B.B.C.; yet it may be pointed out that social investigations, whether of sexual behaviour or of occupational status, have proved rewarding even though the populations on which they were based did not conform to rigorous principles of selection. The data revealed by this type of sociological serendipity can suggest fruitful topics for systematic inquiry. For example, it is noteworthy that so many correspondents express misgivings about the present facilities for the recognition and treatment of mental disorders. Nor were all the criticisms couched in negative terms; there were many constructive suggestions about increasing doctors' instruction in psychological medicine, and improving aftercare and rehabilitation services. In view of the recent Royal Commission's stress for an increase in "community care" it is interesting to find this indication, tenuous though it may be, of a reciprocal public readiness for such measures. It is probably relevant that the most popular item in all responses to the question asked at Broadcasting House was an expression of good will towards the mentally afflicted.

Mental illness is a disquieting subject, and one which is most feared when least is known about it. This investigation has suggested that in some quarters there still exists a good deal of disquiet and lack of information; and this in turn suggests the desirability for continuing efforts of health education in this field.

We thank Mrs. Adams, Dr. W. A. Belson, and Mr. Miller-Jones, of the B.B.C., and Miss Appleby and Miss Addis, of the National Association for Mental Health, for their co-operation in this inquiry.

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# Reviews

## GRAY'S ANATOMY

*Gray's Anatomy, Descriptive and Applied.* Edited by T. B. Johnston, C.B.E., M.D., D. V. Davies, M.A.(Cantab.), M.B., B.S., and F. Davies, M.D., D.Sc.(Lond.), F.R.C.S. Thirty-second edition. (Pp. 1,604+xxiii; illustrated. 126s.) London: Longmans, Green and Co. 1958.

Textbooks, like human beings, seldom live for a hundred years. When they do, as in the case of *Gray's Anatomy*, it is because the original author hit on something which was urgently needed, and (quite as important) the successive editors kept well in view the original purpose and faithfully adhered to it. In the preface to the first edition (penned in August, 1858) Henry Gray clearly stated his purpose, which was "intended to furnish the student and practitioner with an accurate view of the anatomy of the human body, and more especially the application of the same to practical surgery." With that intent he made many dissections, and his friend Vandyke Carter sketched several hundred of them for insertion in the new book. Gray told his friend Timothy Holmes that he would have liked to include more strictly scientific matter, but he hoped to do so in a later edition. When the book was published it was welcomed by the *British Medical Journal* and the *Lancet*, but was severely, and unfairly, reviewed in the *Medical Times and Gazette*. The author was openly accused of plagiarism from Quain and Sharpey's book, and we think a careful reading of the long review gives a clue to the anonymous person who wrote it. It did the book no harm, and a second edition was called for within two years.

Unfortunately Henry Gray died in 1861, but his foundling was adopted by his friend Timothy Holmes, who inserted a long scientific introduction on general anatomy and histology which has remained a valuable feature of the work ever since. After Holmes had seen the book through seven editions it was taken over successively and successfully by Mr. Pickering Pick, Professors R. Howden, T. B. Johnston, and J. Whillis, and, in this latest edition, Professors D. V. Davies and F. Davies. Professor Johnston pays a warm and just tribute to the part played by the late Professor J. Whillis in helping to edit several editions, but the main credit for the present high standard attained must be given to Professor Johnston himself, who for nearly 30 years has efficiently supervised the revision of the work.

This centenary edition has been rejuvenated. Looking at its beautiful coloured pictures and excellent radiographs, noting the numerous references to recent researches and the surgical applications interspersed through the text, the reviewer feels a little envious of the modern student who has such a delightful and helpful companion as his guide. There is in this edition a very appropriate link with the original author, for Miss Fitton Jackson, a blood relative of Henry Gray, has contributed some excellent electron-micrographs. A happy thought also was the inclusion of photographs of five of the early editors, including Gray.

Henry Gray, Timothy Holmes, and Pickering Pick were all St. George's men, but the book is now a representative British work which has achieved international renown. Readers might like to know what this *Journal* thought of it a hundred years ago. In the *British Medical Journal* for November 13, 1858, the reviewer wrote: "We cannot avoid congratulating St. George's Hospital on the production of such a book by two of its own pupils—a book which must take its place as *the* Manual of Anatomy, Descriptive and Surgical." Not a bad prophecy.

ZACHARY COPE.

## NATURE AND PURPOSE OF MEDICAL EDUCATION

*For Future Doctors.* By Alan Gregg, M.D. (Pp. 165+x. 26s.) Chicago: University of Chicago Press. London: Cambridge University Press. 1958.

In this book there are eleven essays by the late Alan Gregg, of the Rockefeller Foundation. They are delightfully written and are a pleasure to read. They offer a distillate of the wisdom of a most able man who had made a wider study of medical education than any other in recent times. There is in them no mention of curricula, teaching-aids, schemes, or projects. Instead they state clearly the nature and purpose of medical education, and therefore they are of great value.

This is an era in which, not least in England, the medical profession faces the most serious danger possible—that of forgetting that it is a profession and by its own default ceasing to be one. Many join it now who have no experience or inherited awareness of professional life, and can acquire only those standards and values which they find in medical school and in practice. Intellectual honesty is hard to teach, and personal integrity can be shown only by example. Both can easily be made to bow before expediency, and when expediency is called realism then inspiration and creativeness are called idealism and are killed by kind ridicule. In these essays, written with the authority of one who knew most of the world's medical schools, Dr. Gregg rebuts this subtle propaganda and leaves no doubt that in reality we will lose all if we do not follow ideals. He quotes the words of Paul Valéry: "You must live as you think: if not, sooner or later you'll end by thinking as you have lived."

This book should be read by all future doctors. They will find in it a wealth of clear practical advice on two problems—what should be their aim and how they can achieve it. They cannot but benefit from the dreadful warning of "Preservéd Jones," who as a young man, in an age of bewildering increase in knowledge and fierce competition, was by his ambition to succeed led into dedicating himself to a narrow specialty. Now at 66 he is sadly complete, and "from his deliberate ignorance he cannot impart wisdom, or from his embitterment, serenity."

It is equally important, however, that all who teach should read, and read again, these essays by a man who saw so clearly the present predicament of the university—which must at the same time supply "stability of purpose and effort" and yet "be promptly and delicately responsive to changes in the environment and even changes in objectives." There are few who will not have to admit to suffering just a little from the "C.I.P." syndrome, the disease which can so easily affect those who belong to a "good" school of medicine: Complacency, Ingratitude, and Parochialism. There can be none who will not benefit from Dr. Gregg's words to the students of Texas: "He teaches best who shows his students how to learn: not what to think in 1953, but how to think and how to learn to think in that long stretch of days awaiting you till, let us say, the year 2000."

JOHN ELLIS.

## THE LANGUAGE OF MEDICINE

*The Story Behind the Word: Some Interesting Origins of Medical Terms.* By Harry Wain, A.A., B.S.M., M.D., M.S.P.H. (Pp. 342+viii. 63s.) Springfield, Illinois: Charles C. Thomas. Oxford: Blackwell Scientific Publications. 1958.

As medicine becomes more and more technological any attempt to bring out its humanistic aspect deserves the warmest welcome. In this book the author has brought together a mass of interesting information not readily found elsewhere. He gives the origin and meaning of medical and allied scientific terms, the names of diseases, symptoms, signs, drugs, and instruments, with short biographies of their discoveries and inventors. He also includes popular terms such as "clap" (gonorrhoea) and "court plaster." Perhaps the greatest merit of the book is that it gives not only the changes in meaning which terms have undergone through the centuries but also the date of the adoption of the modern meaning and the name of the person responsible where this is known. So far as one can tell, the information is, in general, correct. On Lettsom, however, the author goes badly astray, describing him as "a Virgin Island physician who wrote an original account of alcoholism and gave an original description of alcoholic multiple neuritis."

Unfortunately the book is made unnecessarily bulky in several ways. It is written in full English instead of telegraphically, and no use is made of abbreviations such as *L.* for "Latin." Almost every item begins with some such sentence as "This term is derived from . . ." or "This term comes into our medical vocabulary from . . ." There are, moreover, a great many words, such as "education" and "eliminate," which are adequately dealt with in ordinary dictionaries. There is, for instance, a ponderous explanation of "visit." A worse fault is the inexplicable inclusion of words which have nothing to do with medicine—for example, "acrobat," "budget," "grass-widow," "Hobson's choice," "Portland cement," "daddy," and "ha-ha." These excrescences not only add to the size and cost, but also blur the author's admirable purpose of describing "the imagination and romance behind the language of medicine." The book could, without loss, be reduced to half its size. As it stands, it is far beyond the pocket of nurses and students. It should, however, be in every library, and teachers who wish to add human interest to their lectures would be well advised to use it.

FFRANGCON ROBERTS.

## EDUCATIONAL VALUE OF EXAMINATIONS

*Goepp's Medical State Board Questions and Answers.* By Harrison F. Flippin, M.D. Ninth edition. (Pp. 569+xi. 56s.) Philadelphia and London: W. B. Saunders Company. 1957.

This book, although new to me, was first published in 1908, and it is now in its ninth edition. Its 500 pages cover eleven medical subjects, including anatomy and physiology, and it contains answers to several thousand questions collected, one assumes, from the U.S. State Board examinations. The original author, the late Max Goepp, presumably approved the natural desire of students to pass examinations, and intended not only to save them the trouble of looking up the old examination papers but in doing so to provide them with much essential information. The book can then be used to discover how far written examinations can themselves contribute to the education of the student. Although these questions are for the most part unexceptionable examination specimens, such as the diagnosis of ruptured uterus or of posterior inferior cerebellar artery thrombosis, some questions, such as the treatment of the common cold (allotted 500 words) or of histamine headache, are more likely to educate the thoughtful examiner than to encourage rational thinking in the examinee. Since the questions chosen are mainly those requiring factual answers, demanding at the most a capacity for grouping remembered facts (answers of "the things on the bed, things in the bed, and things under the bed" variety), it may be that the unselected questions were better designed to test the candidate's experience and reasoning power.

The book has many merits. It is well printed and easy to read, and because it has been published so many times it is, in general, accurate and comprehensive in its information. Since many subjects are dealt with in one volume, it is possible for the student to refer easily to another section to resolve a doubt or to correlate facts—to look up in the anatomical section, for example, the situation of the restiform bodies and the vestibular nuclei when reading of posterior inferior cerebellar thrombosis, or to refer to the account of the phosphatases in the biochemical chapter when thinking about diseases of bone or liver. Although the book has a remarkable amount of information, it contains less than the cramming textbooks devoted to single subjects: much is omitted and much is presented in a form unsuitable for students. It is more authoritarian and dogmatic in tone than are modern textbooks; facts are stated without references, and hypotheses are advanced as facts without giving the evidence on which the theories are based. For example, it is stated that fat children are sexually retarded (itself unestablished) because the gonadal hormones are fat-soluble and are stored in the excess body-fat—an ingenious but non-proven hypothesis; and the long-held theory that gynaecomastia in liver disease is associated with an excess of circulating oestrogen is said to be supported by an increased output of oestrogen in the urine—a finding by no means universally accepted. The point here is not only that the student has been misled, but that an opportunity has been lost of allowing him to come to a conclusion as to the validity of a hypothesis by the presentation of the evidence.

The faults of the book are in some measure the faults of medical education and of the examination system. They can be illustrated by the frequent use of the word "significance" in these questions—for example, "What is the significance of the blood cholesterol?" (p. 235). The word "significance" is unqualified, and at its worst, therefore, it might denote an "examination significance" requiring a list of disorders in which the blood cholesterol is plus or minus (as supplied in the answer); at the same level it might imply the "retrospective diagnostic significance" of an unsuspected deviation of the blood cholesterol not suggested by the clinical findings; at a slightly higher level the "diagnostic significance" of an abnormal blood cholesterol waiting to be fitted into an already determined clinical pattern; and finally it should comprehend the only true meaning of "significance" as applied to the level of the blood cholesterol—the pathogenesis of a disturbance of cholesterol metabolism. And how much do we know of that?

It is not, then, surprising that a book of this sort should fail to teach medicine at a high level, for the authors have set their sights lower than this. Their objective is to assist the students to pass examinations. Such cramming textbooks are educationally damned for one reason alone—that knowledge hastily acquired is by most brains rapidly forgotten. This book can be unreservedly recommended only to the unfortunate emigrant Englishman who, having successfully emerged from the fiery trials staged in Lincoln's Inn Fields or Pall Mall East, is nevertheless compelled to face the State Board's qualifying examination.

D. V. HUBBLE.

*The Student-Physician* is a series of studies in the sociology of medical education, edited by R. K. Merton, G. Reader, and Patricia L. Kendall (pp. 360; Harvard University Press, 1957). It attempts to answer such questions as why students decide to study medicine and by whom they are influenced in making their decisions; when and why they decide to specialize; the attitude of students towards their future careers, and when and how they begin to think of themselves as doctors. The types of patients preferred by various kinds of students are also examined, and two papers are included giving experiences with the Cornell Comprehensive Care and Teaching Program, in which students serve as "family physician" to a particular patient and, if possible, to the patient's family as well. *The Student-Physician* is available in this country from the Oxford University Press, price 40s.

*Pica*, by Marcia Cooper (pp. 114; Blackwell Scientific Publications, 1957; 27s. 6d.), is a comprehensive survey of the historical literature on the subject by the assistant professor of public health administration at Johns Hopkins University. The author has included reports of pica in animals and has considered its anthropological and psychological implications. She has also studied its incidence in 784 pre-school children, of whom 21.9% were found to have a record of pica. It is suggested that poor nutrition may be the underlying factor.

*Natural Selection and Heredity*, by P. M. Sheppard (pp. 212; Hutchinson and Co. Ltd., 18s.), deals with some recent ideas on the mechanism of evolution. Two chapters explaining the elementary principles of heredity are included. The author has not attempted a complete survey of the whole field of population genetics, which would have been impossible in a book of this size, but has treated in detail certain selected subjects which illustrate important principles.

*The Atom and the Energy Revolution*, a Penguin Special by Norman Lansdell (pp. 200; 2s. 6d.), is an explanation of the social and political implications of developments in this field, written for the general reader, for the business man who wishes to adapt himself to the new environment, and for the specialist in other fields. A chapter is included on radiation risks and insurance against them.

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## THE STUDENT LIFE IN GENERAL PRACTICE

William Osler, in his valedictory address to students at McGill University in 1905, exhorted them to remember that the education in which they had engaged themselves was not a medical course, but a life course, for which the work of a few years under teachers was but a preparation. He recognized that some of his listeners were natural students, and for them there would be little difficulty in a continuing devotion to books and journals; while others were students of men, practical fellows who enjoyed the diversity of God's creatures. The danger for the first group was that they might become bookish, shy, diffident, impractical men whose knowledge was therefore not readily available to meet their patients' needs; and for the second that they would become practitioners busily immersed in routine labours which left them without either the time or the inclination for study. The great clinicians are those who, like Osler himself, we may now add, are both students of books and students of men.

The need for the continuing education of the general practitioner is certainly not less than it was fifty years ago. The opportunities for successful diagnosis and treatment which lie ready to be used by the resourceful and educated family doctor are immeasurably greater than they were in Osler's day. He gave, in this and other addresses, much the same advice to the perpetual student-doctor as can be found, fifty years later, in the Fourth Annual Report of the College of General Practitioners, 1956, and in the article by Dr. George Swift in this issue (p. 580). The paramount requirement in continuing education is for good doctoring itself—good history-taking and examination, and careful records. This requires method and self-discipline, and too many, both inside and outside hospital, have to admit that from time to time they fall short of their own standards. The education of the medical student in these matters steadily improves, and good habits deeply rooted in youth are not so easily lost. Further, a few journals must be regularly read, the local medical society enthusiastically supported, and the refresher course annually attended. Osler favoured a long period of postgraduate study every five years—the quinquennial brain-dusting—but to-day this is hard to achieve, and for most doctors it would be less valuable than a week's refreshment and stimulus each year.

As the need for continuing education is increasing, so are the opportunities. The fees and expenses of practitioners attending postgraduate courses, up to twenty-two half-days a year, are now paid by the Ministry of Health. There is no doubt, too, that the domiciliary consultation scheme has done much, not only for the education of both general practitioner and consultant but also for their good relationships. Consultants must be gratified to see it publicly stated by general practitioners that they find these consultations of considerable educational value. The increasing access of family doctors to *x*-ray departments and to pathological laboratories has vastly improved their facilities for studying the advances in the diagnosis of disease. Again, the opportunity to teach medical students and to train assistants has notably stimulated self-education in some general practitioners.

Although good progress has been made in the first ten years of the National Health Service, much remains to be achieved. The objective is to make continuing education as easy as possible for the largest number of general practitioners. Elsewhere in this issue (p. 583) Drs. John and Valerie Graves describe the early results of an interesting and hopeful experiment by the Medical Recording Service of the College of General Practitioners to provide medical talks on tape or disk for the doctor who finds it difficult to get to refresher courses. Their intention is not that the isolated practitioner shall listen to these records in solitude, but that he will gather a few of his neighbours to form a small discussion group to debate the medical message. The College hopes eventually to be able to provide for its members an up-to-date course in any subject.

For other difficulties there must eventually be found varying solutions. The Ministry of Health can provide further help: for example, by paying locum fees for the doctor in a partnership who is attending a refresher course. Most partnerships are at full stretch during the holiday periods of the summer, and to ask them to cover additional absence for postgraduate courses is to demand too much. More leisure for study, higher capitation fees, and merit awards—these are subjects which will receive increasing discussion in the next few years. Heaven—in this case the Ministry of Health and the Treasury—must show itself ready to help those who are now so obviously helping themselves.

## PHARMACOPOEIAS AND FORMULARIES

The prescribing doctor of to-day is not short of pharmacopoeias and formularies, to say nothing of the spate of literature from the pharmaceutical houses that he finds in his letter-box every morning. Two new editions of pharmacopoeias have recently appeared, Volume I of the *Extra Pharmacopoeia*[1] ("*Martindale*") and the *British Pharmacopoeia*.[2] Seventy-five years ago William Martindale in collaboration with Dr. Westcott produced the first edition of "*Martindale*," a small volume of 313 pages. Martindale was at one time a pharmacist at University College Hospital, London, and later the owner of a retail and manufacturing business in New Cavendish Street. The *Extra Pharmacopoeia* was an immediate success, and edition followed edition until it was finally produced under the direction of the Pharmaceutical Society with the help of a panel of experts. The latest edition, the 24th, which contains some 1,700 pages, is a very valuable reference book for both doctor and pharmacist. For the first time the titles of the monographs are in English and not pharmaceutical Latin, an innovation introduced by the British Pharmacopoeia Commission five years ago. Doses are expressed for the first time exclusively in the metric system, the Imperial equivalents being added only for those drugs that are often prescribed in this system. In *Martindale* one can find the physical and chemical properties, pharmacology, mode of action, dosage, uses, side-effects, antidotes, and literature references for every drug likely to be prescribed. Not only are old remedies described, but also the latest drugs, such as sulphamethoxypyridazine ("midicel," "lederkyn"). The wide coverage of the book can be judged from the index, which contains 20,000 references. It is remarkable how up to date *Martindale* is, and Dr. K. Capper, the editor, is to be congratulated for his share in its production. There are references to a large number of foreign pharmacopoeias and to almost every proprietary preparation available in this country. There are special sections on antibiotics, immunological products, and radioactive isotopes. In each successive edition of *Martindale* the proportion of space allotted to new therapeutic agents has increased, yet with remarkably few deletions of the older and traditional remedies. There are some who deprecate the inclusion of many of the latter, yet they are still prescribed: once a drug becomes established, it takes a long time for it to become obsolete. Undoubtedly *Martindale* is one of the most useful reference books on drugs for both doctor and pharmacist.

The *British Pharmacopoeia*, which is published under the direction of the General Medical Council at intervals of five years, is more useful to the pharmacist than to the physician. The new edition, which came into force on September 1, is the ninth. The *B.P.* lays down standards of purity, methods of testing and identification, and the doses of the more important drugs. The doses given are not binding on prescribers, but are intended for general guidance and represent the average range of dosage suitable for adults. *B.P.* doses are a useful guide for the pharmacist in checking quantities prescribed. As in the new *Martindale*, doses are now given in the metric system and the titles of the monographs are no longer in pharmaceutical Latin, but in English. The *B.P.* is drawn up by the British Pharmacopoeia Commission, of which Professor Dunlop, of Edinburgh, is chairman. Approved names for new drugs are devised or selected by the Commission from time to time. The permission given in certain monographs for the addition of a suitable colouring agent to the coating of tablets is an innovation.

The *British Pharmaceutical Codex*, familiarly known as the *B.P.C.*, was originally produced in 1903 by the Council of the Pharmaceutical Society as a book of reference for those engaged in prescribing or dispensing medicines. The need for a book of standards for drugs and preparations not in the *B.P.* became increasingly apparent, and the provision of such standards has become an important function of the *B.P.C.* The inclusion of a drug in the *B.P.C.* is now regarded as an indication that it is of value, or is an established constituent of a useful preparation. The monographs give a description of the drug, its sources or preparation, physical properties, a critical summary of its pharmacological action and uses, dosage, conditions for storage, and the treatment of poisoning through overdosage. Like *Martindale*, the *B.P.C.* continues to be a reference book of the greatest value in the practice of medicine and pharmacy. Its object is to describe all new drugs which clinical evidence and experience have shown to be useful. A new edition is due to appear next year. The many new compounds produced by a very active pharmaceutical manufacturing industry will provide ample material from which to select drugs for the new edition. A valuable part of the *B.P.C.* is the formulary section, which gives details of the preparation of a number of prescriptions and tablets.

The *British National Formulary*, which is produced by the Joint Formulary Committee of the B.M.A. and

[1] *The Extra Pharmacopoeia*, vol. I, 1958, the Pharmaceutical Press, London. Price £3 5s. net.

[2] *The British Pharmacopoeia, 1958*. Published for the General Medical Council by the Pharmaceutical Press, London. Price £3 3s. net.

the Pharmaceutical Society, is a small pocket-size handbook, now in its fifth edition, giving a comprehensive range of preparations and formulae sufficient to meet the needs of the prescriber in hospital and general practice. Some of these formulae correspond to proprietary preparations. In the main edition the formulae are listed under descriptive headings such as mixtures and tablets, whereas in the alternative edition, first published last year, the drugs and preparations are arranged according to their predominant action on the bodily systems—that is, pharmacologically—and each group is preceded by a short account of the actions and uses of the preparations that follow. The alternative edition of the *British National Formulary* is certainly the best therapeutic seven-and-sixpence-worth that can be bought between two covers to-day.

## PSYCHOLOGICAL MEDICINE AND UNDERGRADUATE EDUCATION

The teaching of general practice and that of psychological medicine are two subjects which have been coming more prominently into the arena of debate about medical education. Elsewhere in this issue Dr. Richard Scott writes on "Undergraduate Education and the General Practitioner" and a working party of the College of General Practitioners reports on "Psychological Medicine in General Practice." It may well be that these, from the educational point of view, are but two facets of a single problem. The working party of the College of General Practitioners recognizes how great to-day is the unmet need. Such studies on the prevalence of psychological illness in general practice as have been published, allowing for observers' predilections and inevitable differences in criteria, leave little doubt that general practice in the future will concern itself increasingly with such matters. As J. R. Ellis[1] has pointed out, there is no great virtue in teaching medical students simply what is done currently in general practice. Rather educators must aim to teach what they believe should be done by the future generation they are training. Improved teaching in general practice and improved teaching in psychological medicine (meaning by psychological medicine the management of neurotic and psychosomatic difficulties rather than the formal disease entities of psychosis and dementia) may therefore be a part and parcel of each other, separate only for descriptive and administrative convenience.

Improved teaching in psychological medicine will come gradually, for there is still much disagreement about it, and no prospect of any large part of the syllabus soon being given to the psychiatrists. The amount of time a student gives to psychological medicine is more or less voluntary; it will probably remain so. Many psychiatrists, as the working party points out, feel that their subject will only get its rightful weight if there are compulsory questions in the final examinations. But for a time yet psychiatrists must depend on taking up their option on the students' interest. This should not be too hard; properly presented the subject is as interesting as any in medicine. D. O'Neill and two of his students[2] have described a method whereby students do practical case-work. Here may well be an opportunity worth further investigation. Medicine and surgery are now so highly developed that students can hardly be more than passive onlookers, having no essential role in the therapeutic machinery of the teaching hospital. Psychiatry, however, is still a developing art: the novice may make a useful contribution as well as the expert. In the casework that O'Neill describes, the student does something of real value for the patient; this may appeal increasingly to the keener but frustrated embryo doctor.

Development of student health services, too, may have repercussions on the teaching of psychological medicine. Teaching which helps the student himself clinically with his own difficulties can be most effective. N. Malleson[3] has shown how some 25% of ordinary undergraduates, at some time in their course, will go with personal and minor psychiatric problems to their student health doctor—provided that he has established a reputation for friendliness and helpfulness. As high, or higher, a proportion of medical students might learn by example some of the general principles of good medicine, good psychiatry, and good general practice from a physician to whom they go when in difficulties themselves.

As to the teaching of general practice, Dr. Richard Scott describes the view of the College of General Practitioners in these words: "Our College," he writes, "does not advocate vocational training for general practice during the undergraduate years, but recommends that the field of general practice should be exploited in order to widen the professional horizons of the next and succeeding generations of medical graduates." New buildings and departments are not likely to come easily, and for better or worse most teaching is likely still to be given in the surgery of the ordinary working practitioner. It is here a little surprising that the arrangements for such apprenticeship, already running for some years at a number of medical schools, have not prospered more. Is it the students themselves who are not too keen? If it is realism to appreciate that the whip of an examination question is in practice a principal spur to study, it is realism to acknowledge that students are almost invariably fighting keen to fix themselves remunerative vacation employment.[4,5] Could not this keenness be harnessed? Are there not large busy practices where, either in vacation or in the evening during term, a medical student, game for all jobs, would not prove worthy of some modest hire?

[1] Ellis, J. R., *Lancet*, 1956, **1**, 813.
[2] O'Neill, D., *et al.*, ibid., 1958, **2**, 34.
[3] Malleson, N., *The Matrix of Medicine*, 1958. London.
[4] Thoday, D., *Universities Quarterly*, 1955, **9**, No. 3.
[5] *Times Educational Supplement*, 1958, p. 1309.

## MORE AND MORE SPECIALISTS

The exact definition of the term "specialist" presents difficulty. A booklet[1] recently published by the World Health Organization brings this out in its analysis of the legal requirements for the recognition of specialists. In 1949 the World Medical Association sent out an inquiry to its member organizations and found out that in sixteen countries there were specific standards which a physician had to meet before announcing himself as a specialist, and in twelve countries there were no standards.[2] Only a few of the countries in the first group at that time had laws on medical specialization, but since then about ten further countries have introduced legislation on the subject. The countries covered by the survey prepared by W.H.O. can be broadly divided into two categories—23 countries in which the training and practice of medical specialists is regulated by law and a second group in which it is regulated by the medical profession.

In some countries—Austria, France, Switzerland, and South Africa, for instance—specialists are required to devote themselves exclusively to their specialty: they do not practise general medicine. The definition of a specialist drawn up by the World Medical Association does not contain this restriction, although it appears in the definition of the United States Commission on Graduate Medical Education. In the United Kingdom specialists are defined in the National Health Service (Appointment of Specialists) Regulations, 1950, as medical or dental officers, whether whole-time or part-time, who are appointed for the purpose of practising a special branch of medicine or dentistry with full responsibility for the treatment of patients or the carrying out of clinical, pathological, or ancillary methods of investigation. The possession of a specialist diploma is a necessity in many countries. In Spain, for instance, the legal definition is as follows: "Without prejudice to the free practice of the medical profession in all its branches, no person shall hold himself out as a specialist and hold a specialist appointment unless he is in possession of the corresponding specialist diploma."

The specialties recognized by legislation can be roughly divided into four groups—medical specialties (internal medicine, paediatrics, neurology, psychiatry, and so on), the different branches of surgery, laboratory work, and public health. In Austria there are 16 recognized specialties and in Czechoslovakia 65: in the latter country there are 12 sub-branches to the main specialty of paediatrics. In most countries the training of specialists takes place at approved centres, the required period of training varying from country to country and from specialty to specialty. In South Africa the doctor who intends to become a specialist must undertake the recognized postgraduate training and must also submit proof that he has spent at least two years in general practice. And in eastern Germany he has to submit a police certificate of good character.

As to the number of specialists, there has been in recent years an enormous increase everywhere. In the U.S.A. the number tripled between 1940 and 1951, and in 1954, out of 155,000 physicians 65,000 were practising a specialty and a further 20,000 were "interested in a specialty." The number of specialists employed in Britain's National Health Service is not recorded, but the number of consultants rose from 5,649 in 1950 to 6,902 in 1957.[3] In Denmark two-thirds of the practising doctors in 1955 were specialists or had applied for specialist training. The increasing tendency towards specialization is evidently so strong that the outnumbering of general practitioners by specialists is more than a possibility; it has in fact happened already in some countries.

[1] *Medical Specialization—A Survey of Existing Legislation*, 1958, World Health Organization, Geneva.
[2] *Postgraduate Medical Education and Specialist Training*, 1950, World Medical Association, New York.
[3] *Report of the Ministry of Health for the Year ended December 31, 1957*. Part 1, 1958, H.M.S.O., London.

## MEDICAL PRACTITIONERS' HANDBOOK

Many an experienced doctor has looked back with a certain amusement at the omniscience he seemed to possess when he saw his name in the finals pass list. The pre-registration year does perhaps temper somewhat the exultation that earlier generations used to know when their student days came to an end, for it is an implacable reminder of something that could formerly, at least for a short time, be shut out of mind. This is that much more remains to be learnt; and, at the end of it, much more again. Among the numerous books whose contents will be found worth chewing over (if not immediately digesting) is *The Medical Practitioners' Handbook*, published by the B.M.A.[1] A revised edition has recently been issued.

All sorts of administrative, business, and legal problems soon begin to crowd in upon a doctor beginning medical practice, whatever the particular branch of medicine he has chosen, and this book is designed to help him solve some of them. It does not pretend to do what only a library could attempt, but many doctors found that the previous edition was of great help to them. It is hoped that not only beginners but experienced practitioners will obtain useful information from this new edition. The book opens with a section explaining the obligations and privileges of registration, covering broad issues such as association with unqualified persons and small but important details such as the kind of plate a doctor may put up. A clear account of the structure of the Health Service follows, and then information on other fields of medical practice. All sorts of useful advice is given, some of it in the form of questions and answers about problems that are often put to the B.M.A. Secretariat. Lists of useful addresses conclude the volume, and it is provided with an index. Based as it is on many years' experience in advising doctors about medical practice, the *Handbook* is well worth looking through and then keeping on the desk for ready reference.

[1] *The Medical Practitioners' Handbook*, British Medical Association, London, revised edition, 1958. Price 12s. 6d. net; members of the B.M.A. 10s. net; final-year students and graduates in the first three months after qualifying 5s. net.

## MORE MOBILITY

At the B.M.A.'s Annual Meeting a few weeks ago the Representative Body carried a motion[1] which "endorses the principle of filling retirement vacancies in the consultant grade of the National Health Service some time before they occur." It thus gave expression to an idea that has been canvassed for some time—namely, to enable medical men and women to work abroad for short periods while remaining assured of employment later on at home. Such appointments, sometimes called proleptic or anticipatory, would, it is argued, help to overcome the shortage of skilled specialists in some parts of the British Commonwealth and elsewhere. Moreover, they might lead to fresher winds blowing at home in the rather close atmosphere of the National Health Service.

The existence of able and keen Britons working overseas, and not only in the Commonwealth, clearly redounds to the advantage of Great Britain as much as to the host country looking for help or instruction in the latest techniques of medicine. They would find a ready welcome, it is believed, though the greatest need in some countries may be for consultants rather than for senior registrars. In such circumstances, an alternative that has been suggested[2] to the direct proleptic appointment might be for the consultant to be seconded temporarily to an overseas hospital or university, and his place at home be filled for the time by a suitably qualified senior registrar. The medical profession would want to consider such delicate arrangements very carefully before any scheme could come to fruition. So far it has hardly had time to do more than show itself desirous of meeting a need by some arrangement whose only consequences would seem to be beneficial to host and guest, wholly humane, and perhaps helpful to the advance of medical science and practice.

Though immobility is in part a result of the Health Service's structure—as much in general as in consultant practice—it stems too from the severe competition for posts. The young man fears to leave the brooding gaze of his seniors for too long lest he be forgotten. Moreover, the propensity for earlier marriage in Britain has doubtless affected doctors as it has laymen, and the chains of domesticity commonly slow down the newly launched ship. Nor is immobility restricted to the medical scene, for university spokesmen of diverse faculties have lately deplored it and emphasized[3] the need for more staff exchanges. It is indeed a malady of complex causation, so that a careful study of the problem is necessary, and no doubt it will receive that within the B.M.A. during the coming year. Meanwhile it would be unfortunate if the Government were to dismiss it as of little importance because it would affect only few doctors, or as of too great inconvenience because it would upset existing administrative plans.

[1] *Brit. med. J. Suppl.*, 1958, **2**, 68.
[2] Baxter, V. T., *Sunday Times*, August 8, 1958.
[3] *Home Universities Conference, 1957: Report of Proceedings*. Association of Universities of the British Commonwealth. 1958.

## ADMISSIONS TO UNIVERSITIES

The present difficulties of getting into a university need no stressing: it is a case of too many applicants chasing too few places. Since 1955 the number of applications for places has gone up by 50%, and by March of this year the number was already one-and-a-half times that of all the applications submitted for the session 1955–6. This is not to say that the number of applicants has similarly increased, because probably would-be undergraduates are tending to be more liberal with their applications and the more pessimistic they are the more they pin their hopes on a plurality of entry forms. Believing that something could be done to lighten the difficulties, at all events in so far as they arose from causes within the control of the universities themselves, the Committee of Vice-chancellors and Principals of the universities of the United Kingdom set up an *ad hoc* committee to study the machinery for admission to universities, and its recommendations have now been published.[1]

Their whole trend is towards a simplification and, so far as possible, a uniformity in admission procedure. Thus it is suggested that, short of standardization, universities should include in their application forms only those questions strictly relevant to the process of selection and that candidates should no longer be asked to give, in order of preference, a list of places to which they are applying. Instead they should be asked, first, if they are seeking admission to Oxford or Cambridge, and, secondly, Oxford or Cambridge apart, if the institution being applied to is their first choice and, if not, which is. Another recommendation is that all institutions should adopt a common form for reports on candidates by heads of schools. A suggestion that special entrance examinations should be discontinued except for those held exclusively for making scholarship awards will be generally welcomed. Usually an applicant, when he applies for entry, has not completed the examinations which will ensure admission, with the result that offers of places can be only provisional. The committee's recommendation that letters conveying firm or provisional offers should be standardized and should state the provisions in specific terms should help to reduce the confusion which has been all too apt to arise on both sides in these situations. A humane recommendation, too, is that unacceptable candidates or those whose chances are slight should be told so as soon as possible. One of the problems for the candidate who of necessity makes a multiplicity of applications is that it is a matter of chance whether he hears first from the institution of his first choice, and he is often in the unenviable position of not knowing whether to settle for a certainty or wait on in hope. It is wise of the committee, therefore, to recommend that no candidate should be required to give a firm answer to an offer from any institution other than that of his first choice before April 30 in the year in which entry is desired.

[1] Committee of Vice-chancellors and Principals of the Universities of the United Kingdom. *Report of an ad hoc Committee on Procedure for Admission of Students*. 1958. 36, Gordon Square, London, W.C.1.

# MEDICAL EDUCATION IN ISRAEL

BY

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"Who are you?"

"I'm a medical student from London."

"Oh, yes; and what do you want in this department?"

"I'd like to see what you're doing here, and to find out about your teaching methods in particular."

"I'll take you to meet the professor, then; I'm sure he won't be too busy to see you."

Usually the professor was very busy, but he always found time to see me. He was often able to show me round himself, and the mention of the magic words "medical education" would usually evoke a confession that this was one of his special interests. I asked if he could tell me what his department was teaching now, and, more important, what it hoped to teach next year? Our conversation would frequently end with the question, "When are *you* coming out from England to help us?"

The observations that follow were made on a study tour of Israel for six weeks during the summer of 1956. I was then just entering my last clinical year. The bulk of the discussion is based on very full visits to the medical departments of the Hebrew University, on participation in some teaching sessions, and on long discussions about medical education with many students and teachers during a three-weeks stay in Jerusalem.

## Historical Background of the Medical School

The enthusiasm shown by the typical professor is characteristic of all activities in Israel, and has reached into the New Hebrew University Medical School in Jerusalem, pervading both its staff and its student body. Without it, Israel would not have been able to tackle, let alone overcome, the immense difficulties of the formation of the new State. It would also have been impossible to establish the present impressive medical, scientific, and technological facilities despite great economic troubles. The Hebrew University was opened in 1924, and the Medical School was represented in those visionary days only by a Research Institute of Microbiology. By 1936 plans had been agreed upon for the building of a new medical centre containing a university hospital and nursing school on Mount Scopus, and this was completed in 1939.

In 1947 the British mandate ended, and after a year of intermittent fighting to repel a combined Arab attack from all sides the State of Israel emerged on May 14, 1948. Unfortunately, while Mount Scopus itself was a demilitarized area, the road to it was in Arab hands: the new Medical School and the great National Library could not, and still cannot, be used. Nevertheless, the Medical School opened in 1949 in temporary premises with a second preclinical year and started a clinical course a few months later for students who had done their preclinical work abroad. The full course was completed over the next year, and in 1952 there were for the first time students in all stages. The school now produces about 60 new doctors each year.

At this point it is necessary to mention Hadassah. This is the 300,000-strong Women's Zionist Organization of America. Money is raised in America for medical work in Israel, and to-day Hadassah has made itself responsible for all hospital services in the Jerusalem area, and also for hospitals in Beersheba and Safed. In addition, Hadassah finances the whole of the Hebrew University clinical teaching and runs the social medicine research unit in Jerusalem. The School is therefore known officially as the "Hebrew University—Hadassah Medical School," and all its activities are in part controlled by Hadassah. The preclinical departments are financed by the Hebrew University with Government assistance, and the board of management of the Medical School includes four representatives each of Hadassah, the Medical Faculty, and the University, and two representatives of the Israeli Government.

## Immigration and the Need for Doctors

"The State of Israel will be open to the immigration of Jews from all countries of their dispersion"—Declaration of Independence, May 14, 1948. Since that date the 1,200,000 predominantly Russian and German Zionists have been joined in eight years by another 600,000 people—that is, a 50% increase in numbers. The Arab minority of 200,000 in 1948 has remained stable. Many of the new immigrants were old, ill, and destitute; half of them had been ejected from relatively less advanced Afro-Asian countries and the other half were the pitiful remnants of Eastern European Jewry that had survived the second world war. All these people had to be incorporated into a vigorous Westernized State with the status of full citizens. In spite of the necessity for money to maintain a large defensive army, and in spite of the development of a thriving agriculture and of the enormous capital investment in irrigation and building schemes, somehow the money has been found to build hospitals and a research institute at Rehovot and to assimilate this vast immigrant population. It is against this background that the need to produce new doctors has to be viewed.

At one time Israel had the best doctor–patient ratio in the world, 1:450. However, 55% of the doctors in the country are over 50, and most of them are in the three cities—Jerusalem, Haifa, and Tel-Aviv. To-day about 30 Zionist doctors immigrate each year and the Hebrew University produces another 60. The ratio should soon become relatively stable at about 1:750. Even at this figure the outlying areas of the country have to be "doctored" by National Service conscripts, serving a further year after their official two and a half years in the Army. Under these circumstances the production of new doctors is a matter of vital national interest, and the School is determined that they shall be as good as possible—so much so that when the Government recently asked for 75 doctors a year (a 25% increase) the School declined to comply with this request because to do so would have meant lowering its standards.

## Aim and Organization of the Curriculum

Israel has aimed at providing a full therapeutic medical service from the beginning and has also stressed preventive medicine. The aim of the curriculum is to produce doctors with a highly scientific approach to curative medicine who will forget neither the preventive nor the social and environmental approach.

The curriculum was set up with the help of an outside advisory committee consisting mainly of distinguished American Jewish doctors. The aspiring medical student must pass the pre-university entrance examination in one scientific subject. The other subject offered need not be scientific. Whatever his previous scientific background, the 18-year-old new student spends the first 18 months on physics, chemistry, a little biology, some statistics and psychology, and an English course. These subjects are taught by the appropriate University departments in consultation with the Medical School. The next 18 months include anatomy, physiology, and biochemistry; the fourth year is entirely devoted to pathology, bacteriology, pharmacology, and parasitology. The first clinical year is spent in a series of appointments in the wards and the second year is mainly spent in out-patient departments. Thus the curriculum is an unusual combination of a very thorough four-year preclinical education and a two-year clinical training similar to

that of American medical schools. Finally, a student does not graduate M.D. until after a year of rotating internship, during which he also has to write a thesis.

### Departments Visited

Because of the impending move into a permanent centre, the University has been reluctant to spend money on the erection of large temporary buildings. Equipment, however, is freely transportable; there is therefore the paradox of inconveniently small and overcrowded departments magnificently provided with the latest American equipment.

Both the Anatomy and Pathology Departments have great difficulty because of religious objections to the examination of the cadaver. Consequently, eight or more students may work on a single body for the whole year, and this number was once as high as 20. Nevertheless, the students I met appeared to have at least as thorough a knowledge of topography as any of my Oxford contemporaries. When the Department first started there were only brains to study; it is now the custom to start dissection with the C.N.S. as an example in anatomical method and always to refer back to it. There is unfortunately very little emphasis on surface or surgical anatomy. The Histological Laboratory is furnished entirely with round tables centrally lighted, seating eight students. This attractive system saves space and makes for easy demonstration.

Physiology and biochemistry are taught as separate "block" subjects, and lead easily into the pharmacology of the fourth year. The all-purpose changeable laboratory for these subjects is makeshift and clearly inadequate at present. The departments are extremely well equipped and actively engaged in research. While the lecture syllabus is very full, the practical course is still unfortunately based mainly on animal experiments, and there is no adequate course in *human* physiology. Staff difficulties are common; usually one man in six is out of the country on a research grant; and all personnel must do one month each year in the Army. These factors, coupled with occasional illness, contribute to periodic overloading of the teachers.

The Pathology Department is very modern: it has a room for pathological photomicrography and an excellent small departmental library. Students have to master about 400 slides, and appear to receive a very thorough training. Museum facilities, however, are still poor. The Department runs the biopsy (about 7,000 a year) and necropsy (about 300 a year) services of Hadassah; it also teaches medical and dental students, engages in research, and holds weekly clinico-pathological conferences and sessions with many special departments—for example, thoracic, paediatric, and neurological.

The present clinical school has found temporary accommodation in a large polyclinic building and a series of hospitals not designed for teaching, but tolerably near each other. The wards are small and crowded; a ward with 10 beds would in London have only six. Neurosurgery and cardiac surgery are performed in Jerusalem and Tel-Aviv. In one small shed in the grounds of the Beth Hadegel Hospital were a ballistocardiograph, for which students are research subjects, and all the apparatus necessary for cardiac catheterization. This housing of difficult techniques in small sheds is a characteristic paradox of life in Israel to-day, but should be unusual within 10 years.

The selection of clinical material was quite excellent, comprising the whole range of London hospital medicine as well as infestations and infections seldom encountered there. All patients are very thoroughly investigated and students are expected to be absolutely *au fait* with their own four or five patients. Students are responsible for routine blood counts, urinalysis, and microscopy, and the students' notes are official and are consulted along with those of the intern. This system gives clinical clerks a more possessive attitude to their patients and allows students to feel that their views are important and that the hospital would be the worse off without their work.

### Hadassah Social Medicine Centre at Beth Mazmil

The emphasis on a scientific and research attitude to medicine is so great that it sometimes surprised me that students seemed to know their patients so well. The new Social Medicine Centre should counteract the tendency to forget the individual patient within the welter of investigations. It is described in some detail because social medicine is paid so much lip-service in Britain while so little is done outside of special postgraduate units. This centre was set up by a South African and an English doctor who aimed to do first-class general practice which would be as good as the best in their own countries. Special emphasis had to be placed on the preventive approach and on research. The population to be cared for consists of about 5,000 people who are largely new immigrants and range from destitute Moroccans to Anglo-Saxon intellectuals. All these people have been recently rehoused in a new estate in the Beth Mazmil suburb of Jerusalem.

The Centre itself is financed by Hadassah and has just moved to ample and pleasant new buildings. The staff of the Centre includes six G.P.s, of whom three are usually away (Army or study leave or illness), eight to ten well-trained nurses, a psychiatrist, psychiatric social workers, and an anthropologist. An infant welfare clinic and a birth control clinic are run from the main building. This last was less popular when two of the doctors became pregnant! While the doctors must have the exclusion and treatment of organic disease as their first concern, they are always on the *qui vive* for disease of psychosomatic origin. Psychosomatic illness is extremely widespread in Israel, presumably because of the horrors of the background of many immigrants and the daily stress of life in a new and pioneering country. The Centre has resident nurses who are each responsible for about 300 families, and it is therefore able to tackle this type of disease quickly and easily.

At the moment, students go out for lecture-demonstrations. They are allocated families to follow, usually including at least one with a pregnant mother where they can later study neonatal growth. In one or two years' time, when the Centre is fully on its feet, students will each do about three weeks of full general practice under supervision from the Centre. They may also participate in the research projects that are run from the Centre.

*New Centre: Future Plans.*—With regard to Mount Scopus, Hadassah has cut its losses. It has already started to build an enormous new centre in Ein Karim, a western suburb of Jerusalem, to hold schools of medicine, dentistry, pharmacy, and nursing, a library, a polyclinic, and 550 teaching beds, to be expanded later to 900. This scheme should be finished by the end of 1958, and is already ahead of schedule. It will be the main postgraduate medical centre of Israel.

### Topics in Medical Education

#### Student Selection

The current joke of the Medical School is that the Hebrew University must be the most antisemitic in the world. Only 60 students are selected from about 300 applicants, and the University is not anxious to train students other than Israeli citizens or foreign students who have definitely immigrated and are still under the age of 21. At first the Medical School accepted those who had done their preclinical work elsewhere, but now acceptance is for the first year only. Three years ago 30% of the students were women, now only 6%. Private practice in Israel is more difficult to obtain even than in England, and consequently women are as unlikely to lead a full professional life there as they are in England. There is, however, no strict quota system, and women who are academically very good will be accepted. Money is not a factor in student selection: the School disburses £1.50,000 (£10,000 sterling) in scholarships, mainly provided from outside, and each diploma costs the School about £3,000

sterling. The School is prepared to make loans to students. Parental background is not important, and there is obviously no problem about the sons of alumni.

The pre-entrance examination has eight papers—four in science and four in the humanities. A student may be examined in two scientific subjects or in one scientific subject and one other subject. After this examination a hundred students go forward for the interview. Here there are about six teachers, and the object is the same as in other schools. The sub-dean, Dr. Prywes, described his method of interview and explained why he always wanted to know about special interests and hobbies. This was not because they might be of importance in themselves, but in order to test the knowledge claimed and to enable him to judge "how far the student was honest with himself about his hobby and might therefore be expected to be honest about medicine." Round-table arguments among students with teachers watching were discarded because they were technically difficult to arrange and students were shy. There is no discussion, and each selector marks for "in," "in if places available," or "out." By comparing the students' academic results with the original opinions of each selector, it is hoped to obtain over the next few years a group of good student selectors—or, at any rate, good selectors of good examinees—without regard to position on the staff.

The attitude of the Hebrew University to its selections is unusual. If a student fails (failure rates are as low as 3%) it is regarded as the fault of the school that selected and taught that student. Laziness is very unpopular with the faculty, but nevertheless failure without obvious cause is regarded as a slur upon the whole educational procedure.

### Atmosphere of Learning

In the conversation quoted at the beginning of this article, both the approachability of the professor and his interest in and enthusiasm for teaching itself are typical of Israel and would be much less generally encountered in Britain. The most exciting facet of Israel for the visitor from abroad—and for the Jew in particular—is the atmosphere of everyone working together to create a new country quickly. Something of the infectious "muck in together" enthusiasm of the country expresses itself in the Medical School. Staff want to teach and students want to learn, both because they are really interested in their subjects and also because they want to produce good doctors for their country. Consequently staff–student relationships are amazingly informal with very few exceptions, even though not quite on first-name terms.

In the new buildings, staff and students will sit together at meals. Any problem can be discussed easily with any teacher, even with the professors. This type of relationship means that the retinue of registrars and housemen and the unnecessary formality of many English chiefs' rounds can be dispensed with and that students can learn much faster in this atmosphere. Much more emphasis is placed on the bedside tutorial and on the weekly seminars where staff and students can sit comfortably and discuss any problem which may arise during the week about the condition and treatment of particular patients. Unfortunately, I did not speak enough Hebrew to benefit from attending one of these seminars, but students assure me that these are very lively, popular, and instructive two-way procedures.

The Israeli student is as old as his English contemporary, but there the similarity ends. Often he is married; he may have one or more destitute relations to assist in supporting; he will usually take a laboratory job—at any rate during his clinical years; and, above all these major differences, he is passionately interested in medicine. He arrives at the hospital at about 8 a.m. and he might not leave it until 12 hours later; he works extremely hard. It is, of course, a pity that he should have to take these jobs, but it is agreed that these paraclinical jobs supplement formal teaching. He is said to miss a lot of the fun of student life and to be the worse for the lack of it. If so, I did not notice it and I enjoyed his company.

D

## Assessment

### Curricula

Hospital appointments are nearly always full-time, and even a very senior chief will have only about six hours a week for his private practice. This increased time in the teaching hospital and the other factors of familiarity with students make examinations largely a formality. The teacher usually knows more about his students than an examination can tell him. Formal records are kept and examinations are held, but most students know they will pass. One student felt that there was "no feeling of competition to put out another student" as at her American university, but she "had to work very hard to keep up." In the final examination there are no formal written papers, but the detailed differential diagnosis has to be written and discussed in the clinical examination. Objective-type papers are not used.

*Clinical Curricula of Two Students Chosen at Random*

| 5th Year—In-patients | | 6th Year—Out-patients | |
|---|---|---|---|
| Surgery | 6 weeks | Internal medicine | 4 weeks |
| Tuberculosis | 3 ,, | Gynaecology | 3 ,, |
| Preventive medicine | 3 ,, | Dermatology | 3 ,, |
| Internal medicine | 12 ,, | E.N.T. | 3 ,, |
| Obstetrics and gynaecology | 8 ,, | Physical medicine | 2 ,, |
| *À choix* (extra medicine in Jerusalem) | 4 ,, | *À choix* (Kaplan Hospital, Rehovot) | 4 ,, |
| Holiday | 8 ,, | Psychiatry (residence in mental hospital) | 4 ,, |
| Paediatrics | 8 ,, | More neurology and internal medicine | 4 ,, |
| | 52 ,, | Radiotherapy | 2 ,, |
| | | Ophthalmology | 3 ,, |
| | | Military medicine | 2 ,, |
| | | More surgery and paediatrics | 5 ,, |
| | | Social paediatrics (antenatal work) | 1 week |
| | | Holiday | 2 weeks |
| | | Final examination | 1 week |
| | | | 41 weeks |

### Comparison with the English Curriculum

Psychology is more emphasized and is taught earlier than in Britain. Parasitology is very important and is taught in detail. However, students will conduct only about eight deliveries themselves (the obstetrician delivers babies), and they have no undergraduate training in anaesthetics. Paediatrics is very much emphasized: Israel is a growing country with a lot of children, and the care of these is in any case a major national obsession. The system of two months' work *à choix*—in Jerusalem or elsewhere—is attractive: choices varied from extra neurology in Tel-Aviv to a month with the G.P. on a communal settlement or in Beersheba among the Bedouins. Time spent on preventive medicine includes trips to factories in Haifa and to restaurants and sewers locally; there are seminars on such diverse subjects as the social incidence of tuberculosis, prostitution, and coronary atheroma.

### Integration

Integration, if not a nasty word, is certainly a thorny problem. All agree that more is needed, but nobody is sure of how it should be done. Attempts are frequently made: a paediatrician lectures on neonatal growth and takes students to his wards during the anatomy course, and there is an *x*-ray machine in the anatomy department. Neuroanatomy and neurophysiology are taught together, and the teaching in histology is of a functional character. Physiology, biochemistry, and pharmacology will eventually be integrated, at least in practical work. There is also discussion of a projected bioclinical course to give more basic science in the last two years. Clinico-pathological and clinico-radiological conferences and weekly hospital staff meetings are popular. Dr. Prywes, however, does not believe in full clinical–preclinical integration; instead he is concerned to try to get surgeons into the anatomy department and more *doctors* in the preclinical departments in general. He thinks the best method of integration is to encourage a system where teachers have dual appointments in the medical school and in the hospital—and there is a slight tendency towards this.

**Summary**

The historical background of the Hadassah Medical School of the Hebrew University is reviewed.

Visits to several of its departments are described.

Its curriculum and its attitude to selected topics in medical education are discussed.

The following three aspects of its work are emphasized: (1) the tremendous enthusiasm of both staff and students; (2) the acceptance of full responsibility by the University for the students it selects; and (3) the innovations and the interest shown in the field of medical education.

I should like to thank the Sub-Dean of the London Hospital, Dr. John Ellis, for providing me with the incentive to make this study and for his active encouragement and help; and the Sub-Dean of the Hebrew University—Hadassah Medical School, Dr. M. Prywes, for all his assistance in Jerusalem.

# THE STUDENT AND THE CLINICAL CURRICULUM

BY

**EDWARD J. R. ROSSITER, M.R.C.S., L.R.C.P.**
*Education Officer, British Medical Students' Association; lately Clinical Student, West London Hospital Medical School*

In 1956 and 1957 the British Medical Students' Association conducted inquiries into the pre-clinical curriculum. The reports were published in November of 1957, and the comments reaching the association have nearly all been complimentary. This year a survey of the clinical curriculum has been begun, and the first part has been designed to produce a broad outline of teaching methods throughout the country and to find what the students think of them. Nearly all the people concerned have been most co-operative and helpful, but at least one dean has refused to allow the questionaries to be answered in his school, apparently because he considers the work "audacious."

From this, many questions might arise, but there are probably two which stand out prominently. Firstly, what is the students' place in the clinical curriculum? and secondly, Can students make a useful contribution to medical education? One way of considering these questions is by examining the part each teaching unit plays in the curriculum.

One hundred years ago the student's place was clear-cut and exact. He spent most of his time learning direct from his teachers and the remainder in reading his books. This system was reasonable at a time when the teachers could know most of their subject and therefore knew what to teach the students. To-day the situation is vastly different, and no consultant, let alone a student, can hope to know more than a small proportion of Medicine as a whole. While a cardiologist may master his subject he certainly cannot master the whole of clinical medicine; and yet in many, if not all, teaching hospitals the specialists admit general medical cases to their wards and teach general medicine. This method is essential if the specialist is to retain a balanced view of medicine, and to some extent this type of teaching is very good; but we may find the consultant whose specialty is cardiology teaching on a case of ulcerative colitis when it is not inconceivable that the student may know more of this subject than his chief, having been instructed in it by a gastro-enterologist. Many consultants realize this and concentrate most of their teaching on cases of their own specialty, leaving the diseases with which they are less conversant to registrars and other consultants. As a result, a large bulk of the teaching falls on the shoulders of the registrars.

The second major factor in the student's education is the reading he does. This varies tremendously, as in fact it should, but under the present methods of teaching and examinations it is easily possible for a student to pass all of his final examination, at the first attempt, without looking at a textbook for the first half of his clinical course, and certainly he need never open a medical journal. At one time there may have been many arguments in favour of a situation such as this, but to-day a textbook is often out of date by the time it is published, and it is only by constant, carefully selective reading of both books and journals that a doctor can keep abreast of medicine. At how many medical schools in this country is the student taught how to read? It is very easy to say that this is something that every student must learn for himself, but all too often one meets a student who proudly boasts that he has twice read his textbook of medicine from cover to cover before entering his final examination. While this may be a very effective method of passing examinations it is neither an adequate nor a correct preparation for professional life.

It is my belief that too much is left to chance in medical teaching, and as a result, particularly in the London teaching hospitals, the training is far too vocational. This is not to suggest that spoon-feeding is required. It is very easy to criticize, particularly when one is young, but in many ways the student is closer to the curriculum than are his teachers, and as the newly qualified doctor prepares to enter his first professional appointment he may be all too aware of the deficiencies in his teaching.

## The Place of the Medical School

The primary function of the medical school is to produce a doctor with a good basic training in all parts of his profession. No matter what branch he will eventually specialize in he must have a good understanding of all the major aspects of medicine. This must include an adequate training in psychiatry, and the emphasis might well be on the neuroses rather than on the more sensational but considerably less frequent acute conditions. Social medicine, general practice, and marital relations are three more subjects which are so important and yet occupy such a small place in the curriculum.

The medical school should aim at giving the student a broad university background. In London, owing to distance alone, he is almost completely cut off from his university, and five or six years at a place training for only one profession must, in many instances, tend to give him a narrow and biased outlook.

A good doctor must have a thorough understanding of normal family life and the influence of illness and disease upon it. If it is necessary to know the normal anatomy before learning surgery, how much more important it is to understand the normal person before trying to understand the ailing one. It is basically wrong to teach diseases as biochemical reactions or separate entities when so much of any disease lies in the mind.

I do not propose to discuss the many ways in which a student may be helped to gain this understanding, but one effective and fairly uncomplicated method, used in some

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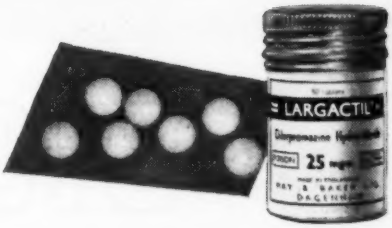

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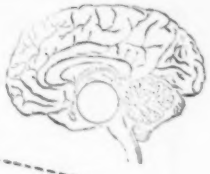

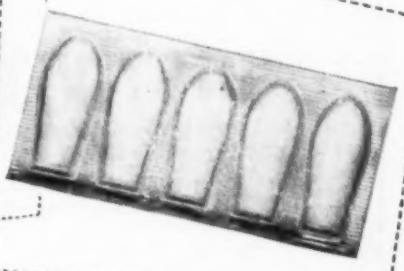

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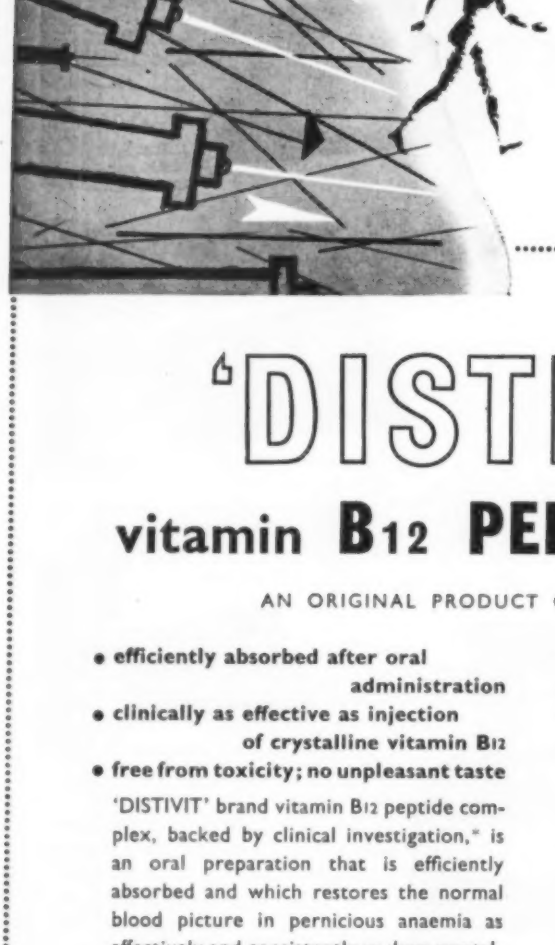

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American schools, is to attach him to a family during his entire clinical course and to whom he pays regular visits.

This, then, is a brief outline of what the medical school can give the student; but what can the student do to help the medical school achieve its aims? The basis of a good medical school is good teaching by those who are interested in their subject and alive to the needs and problems of the students. There is only one person really capable of assessing teachers, and that is the student, who is on the receiving end. One method is for each student to write a short report, anonymously, at the end of each firm on each of his teachers. Those who are consistently reported upon adversely should be relieved of their teaching duties. They could then spend their time in the other two functions of a teaching hospital—namely, to provide a good hospital service for the community and to undertake or encourage research. Nearly always the bad teachers are those who are not interested and undertake the work because it is part of the appointment.

### The Place of the Consultant

The consultant's place in the teaching hospital is well demarcated. To-day he is a specialist, often in a narrow field which is tending to become more and more narrow. His main task is to provide medical care for his patients. Having done this, he has two subsidiary jobs in that he is responsible for teaching on his firm and he usually undertakes research. Only the professor of the department, if one exists, can give a great amount of time to teaching, but even he is often hampered by research. In this country the appointment of a consultant or professor often depends largely on published work or research rather than on ability or desire to teach. If this method of selection is to be used then it seems logical for him to confine his teaching to his specialty.

This can be done in four ways. It is doubtful if long courses of formal lectures on every subject are a good method of teaching; but a specialist lecturing on interesting features or aspects of his work is more likely to inform and inspire students than would long and exhausting lectures on basic fundamentals, repeated each year. The second method the consultant may use is the ward round. This is a time-honoured and excellent way to teach if properly done, and there can be no substitute for a living patient. It is impossible, and unnecessary, for a consultant to prepare a lecture on each patient before the round so long as he confines himself to serious teaching only on cases of his own specialty. It is asking too much for a consultant to become an eminent specialist in one field and remain a general physician in teaching. While some of the older physicians can still do this, it will be increasingly difficult in the years to come, and it is not giving the student the best of the consultant's teaching. Of course, any doctor should be able to teach on the basic symptoms and signs of any disease, but my submission is that the consultant wastes time in teaching things that a registrar can do as well.

In the out-patient department students should be able to take histories and examine the patients so that they can be presented to the consultant in the presence of the firm. This method is indeed time-consuming, but if one undertakes to teach it must be done properly, and it is all too easy to doze through clinical demonstrations in a hot and stuffy out-patient department.

There is a fourth method of teaching, which could, to great advantage, be more widely used. That is the system of conference—either the clinico-pathological conferences or conferences between firms, or even hospitals, each firm demonstrating difficult or unusual cases. Whereas one consultant may act as chairman at these meetings, I believe that specialists, pathologist, registrars, housemen, and students should be heard equally. The student may be poorer in knowledge and experience, but at the time he qualifies he is probably at the peak of his intellectual ability. The motive in teaching must always be to make the student think, not to see that he knows the mean corpuscular haemoglobin or ten causes of Addison's disease. These will come naturally at a later stage, and, although a student should be familiar with the majority of common diseases, he must also see many of the rarer and more obscure ones.

### The Place of the Registrar

The registrar is a vital instructor, if not the most important one, in the whole clinical curriculum, for a good and keen registrar can do much to influence the student. He is the person largely responsible for teaching the fundamentals of medicine. He is the one who has, or should have, enough time to ensure that every student on the firm fully understands every case he is assigned. No one is better placed to carry out teaching by small group tutorials—and this is, without doubt, one of the most effective methods. A registrar is bound to be closer to the student than the consultant, and he should be more aware of the possible problems. It is up to registrars to teach the students how to learn, and how to read both textbooks and journals. If they are too busy to carry out this work, the medical school is placed under an obligation to provide more registrars. There are certainly enough of them available.

### The Place of Research

Research, from the students' point of view, may be broadly divided into two groups. The first is research into a particular subject by reviewing the literature. The ultimate goal is the production of a paper which summarizes the present-day knowledge or development of a subject. This paper may be read to the firm in the presence of the consultant, or to a medical society, or, rarely, it may be published. A paper of this sort every three months soon teaches a student how to use his books and journals.

The second type is, of course, original research, and I am certain that many students could make valuable contributions if they were given support and encouragement. This is already done in some departments of some medical schools, but there may well be a case for extending this method of teaching. It does, however, require sympathetic consultants and registrars who are interested in teaching as well as medicine. Research is one of the methods of keeping a doctor's interest alive, and in many ways it is a question of habit. Surely it is during student days that this habit should be developed.

### The Place of the Examination

That examinations are a necessary evil is unquestionable. Whether the present system is the best is another matter. If a student can spend three years at a medical school and then take two years to pass his final examinations something is wrong. In America a student is examined regularly throughout the course, and the results are considered along with his teachers' opinions. If, without good reason, his reports are consistently bad he is forced to leave. The result is that a student approaching finals knows fairly well what his chances of passing are, and the majority do pass. Few people would like to see the fierce competitive struggles of America introduced to this country, but some modification of the American methods of examination might provide a fairer consideration of a candidate's knowledge and ability. A corollary would be the abolition of non-university examinations. Too many students are not at their best when faced with the absolute hurdle of an examination which may be taken as the only proof of ability to practise medicine.

### Conclusion

This short paper may seem very presumptuous, but as a student who has just undergone three years of clinical teaching as well as having the opportunity to compare the teaching in many schools, I feel that some ideas, purely personal, may be placed before our teachers, who are at present reviewing the curriculum.

The General Medical Council has virtually given a free hand to the medical schools to reorganize the curriculum, and while experimenting there can be little harm in trying methods used in other countries.

The time has come to realize that the clinical student is no longer a schoolchild but an adult at one of the most impressionable periods of life, and, while the majority of teachers appreciate this, there are still many people who believe that those on the very bottom rung of the ladder should be seen and heard only when spoken to. The transition from student to doctor should be almost imperceptible, not suddenly on obtaining some letters after one's name.

# Nova et Vetera

## GRAY'S ANATOMY

### THE FIRST HUNDRED YEARS

Biologically, survival for a hundred years is sufficiently rare to be regarded as a curiosity, but in the world of books there are creations so timeless as to be unaffected by a century more or less of human regard. *Gray's Anatomy*, which was first published on September 1, 1858, can by no stretch of the imagination be included among these immortals. In earlier times, when age lent authority to medical as well as theological doctrine, it was commonplace for students to be examined on texts almost as ancient as their own civilization. That the same work should have served so many generations of medical students in a century which has seen greater advances in medical knowledge than had the thousand which preceded it is so extraordinary a fact as to rank with the curiosities.

What is the reason for it? Has anatomy stood still while all else has been on the march? Or is it so little regarded that the same manual which instructed our great-grandfathers will serve for our sons? What is so special about this book, that, in an age and in a department of knowledge where the very latest information is eagerly sought, it should reach the solitary eminence among current textbooks of celebrating its centenary? The answer must be that, like other centenarians, it owes its survival to the intelligence and skill with which it has been treated, at critical times, by its medical attendants, in this case a succession of distinguished editors and gifted draughtsmen. They have amputated, excised, grafted, and injected to such effect that Gray himself would regard with amazement the prodigy which has grown from his own modest offspring, although a closer inspection would enable him to recognize its original features.

#### Henry Gray

The son of a Court Messenger, Henry Gray was born in 1827 and enrolled as a student at St. George's in 1845. Painstaking industry, rather than brilliance, won him an important prize from the Royal College of Surgeons in 1848, and at the age of 25 he was elected a Fellow of the Royal Society, a distinction less notable then than it is to-day. For a dissertation "On the structure and use of the spleen" he was in 1853 awarded the Astley Cooper prize of 300 guineas. He was, then, a young man of promise and some achievement—but not the greatest or even the most knowledgeable anatomist of his day—when he set out to provide the student, within the covers of a single volume, all that he needed to know of human anatomy in order to pass his examinations and to practise competently as physician or surgeon.

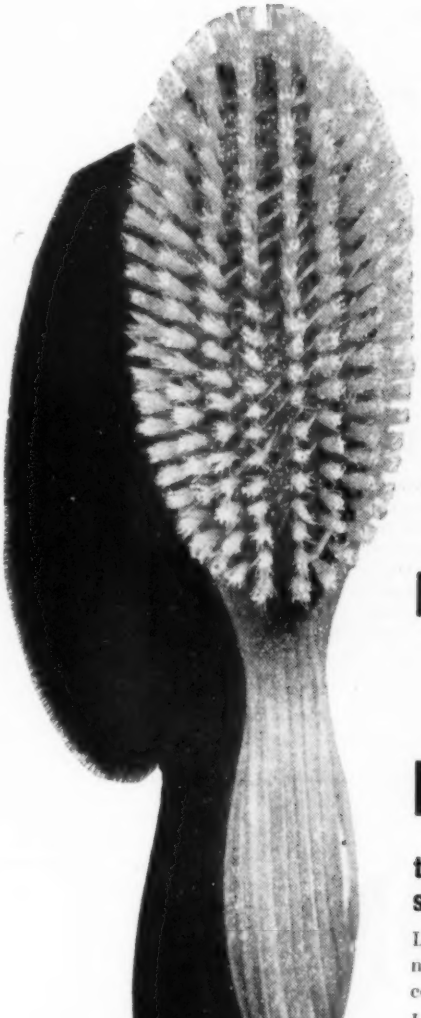
His duties as demonstrator and lecturer on anatomy at St. George's, and as curator of its museum, gave him the experience and material necessary for such a work. Within his own circle of friends and colleagues he was fortunate in having a first-class draughtsman, Henry Vandyke Carter (1831–97),[1] who had also held the post of demonstrator of anatomy at St. George's, and an unusually skilled literary mentor, Timothy Holmes (1825–1907),[2] who was also a surgeon-anatomist. Gray's debt to his illustrator is plain for all to see, and the early success of the book has been attributed to the excellence of Carter's drawings. Of these there were 363 in a volume of 750 pages. The greater part of them were entirely original, but some were borrowed—with acknowledgment—from the works of Quain, Arnold, Breschet, Mascagni, and others, the black-and-white of the woodcuts being relieved by colour only in the sections on the blood vessels, where blue and red indicate veins and arteries. The order is similar to that of modern editions,

FIG. 1.—Henry Gray (1827–1861), from an original photograph taken by Henry Pollock. *By courtesy of the Wellcome Historical Medical Museum.*

but sections originally dealt with separately are now grouped together under the comprehensive headings of angiology, neurology, and splanchnology. Notable by their absence are the now familiar introductory sections on histology and embryology.

The publisher, John W. Parker, included many of the great Victorian authors in his list. He was printer to Cambridge University and is remembered for the introduction of the steam-press against considerable opposition, especially when it was employed in printing Bibles, a proceeding regarded as faintly sacrilegious. His imprint also appeared on the second edition in 1860, but in 1863 he retired and sold his business, with all his copyrights, to Longmans, whose name is found on the title-page of Gray's third edition in 1864.

Work must have begun on a second edition almost immediately, for it was published at the end of 1860 with a number of revisions and corrections by Gray and with 32 additional illustrations, 27 of them from new and original drawings by John Guise Westmacott (1811–84). This was the last edition for which Gray himself was responsible. In June, 1861, while attending a nephew suffering from smallpox, he contracted the disease and died within a week. He was 34.



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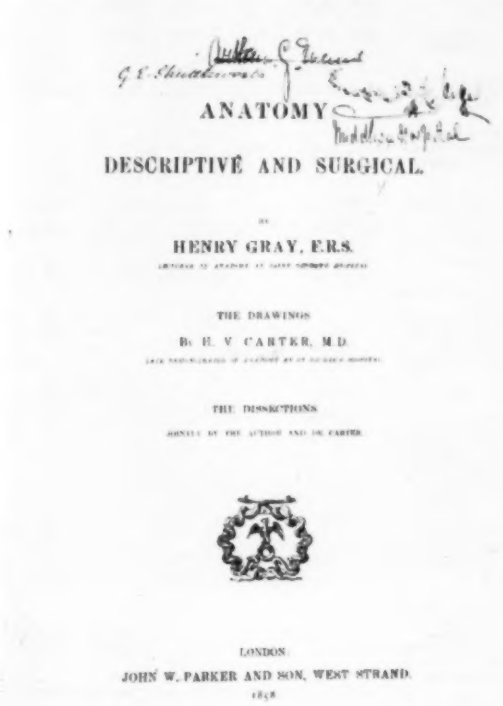
### Later Editors

It was fortunate for the future of Gray's book that his friend Timothy Holmes, who had just begun publication of his *System of Surgery*, agreed to take over the third edition, which was published by Longmans in January, 1864. Few changes were made at first, but for the fifth edition (1869) Holmes supplied an introductory section on general anatomy and development "so as to furnish the student with a very succinct, but it is hoped sufficient, introduction to Microscopic Anatomy." He also included a description of the ovum and structures characteristic of the foetal state, "a subject passed over in previous editions." As he thought it


ANATOMY

DESCRIPTIVE AND SURGICAL.

HENRY GRAY, F.R.S.

THE DRAWINGS

BY H. V. CARTER, M.D.

THE DISSECTIONS

LONDON:

JOHN W. PARKER AND SON, WEST STRAND.

FIG. 2.—The title-page of the first edition, from the copy in the Wellcome Historical Medical Library.

"useless to manufacture new drawings" to accompany this additional text, suitable illustrations were borrowed from Kölliker, Todd, Bowman, and others. In subsequent editions, until the ninth (1880), the last which he edited, Holmes continued to pay particular attention to the section on histology, and additional illustrations were added from Klein's *Handbook for the Physiological Laboratory* and the same author's *Atlas of Histology*. The section on visceral anatomy was also thoroughly revised with the aid of Professor Darling, of New York, and the account of the anatomy of the kidney was rewritten by E. J. Spitta.

Even when Holmes felt that it was time for him to hand over his task to another the link with Gray was still unbroken, for the new editor, Thomas Pickering Pick (1841–1919), was not only a St. George's man but had actually learnt his anatomy from Gray himself. Under his care the stately progression of editions continued unabated, each larger and more comprehensive than the one preceding. The tenth edition (1883) had some new drawings made from fresh dissections carried out at St. George's; the thirteenth (1893) drew on the resources of the Hunterian Museum of the Royal College of Surgeons and new dissections were made there by Professor Pearson, who also helped in the preparation of the drawings, some of which were printed in colour. Pick retired in 1900, but he collaborated with his successor, Robert Howden (1856–1940), in preparing the 15th and 16th editions (1901, 1905). To judge by the glowing portrait of Howden, written by the late Professor Grey Turner when Howden died, he was a very different character from Pick. Howden, who was professor of anatomy at Durham University, "made the subject of anatomy of living and surpassing interest"[3] to his students. Pick "was rapid and correct, but not very inspiring, for he followed the lines of *Gray's Anatomy* so closely that he was popularly reputed among the students to know that elaborate treatise by heart."[4] Pick had introduced the use of rather unsatisfactory half-tone blocks into the illustrations. In the 16th edition (1905) a return was made to woodcuts and line drawing, ostensibly "to lighten the weight of the book," which now had 1,248 pages and 811 illustrations. In the course of his 25 years as editor of the *Anatomy* Howden carried out innumerable dissections for the purpose of new illustrations and constantly strove to keep the book up to date. According to Sir Thomas Oliver, "when he was about to bring out a fresh edition he had the artist for weeks by his side in the college, so careful was he about the minutest details."[5] It was at Grey Turner's suggestion that a reminder of its original author was given to the reader in the 23rd edition (1926), the last which Howden edited, in the form of a brief biographical memoir and portrait of Gray.

It would take up too much space to name all those who have had a part in producing the various twentieth-century editions. The book has followed a parallel course in America, where one of its most important editors was W. W. Keen. When Professor T. B. Johnston, of Guy's Hospital Medical School (later assisted by Dr. J. Whillis), took over the editorship from Howden in 1930 the book was again drastically revised and partly rewritten, and the 24th edition of that year had grown to 1,466 pages and 1,301 illustrations, of which 607 were coloured. The Centenary Edition—the 32nd—which is noted elsewhere in this issue, must therefore be looked upon as the mature product of many minds and many hands. A close analysis would enable us to determine exactly how much of Gray is left in it, but it would be a pointless task. He was once the author of a book, but he might more truly be regarded as the founder of an institution.

F. N. L. POYNTER.

#### REFERENCES


1 For an account of his subsequent career and a portrait see Bishop, W. J., *Med. biol. Ill.*, 1954, **4**, 73.
2 *The Dictionary of National Biography* and *Plarr's Lives of the Fellows of the Royal College of Surgeons of England* have good biographical accounts of Holmes.
3 *Brit. med. J.*, 1940, **2**, 885.
4 *Lancet*, 1919, **2**, 499.
5 Ibid., 1940, **2**, 826.


"It has always seemed to me that the best of all ways to convey an idea is with chalk. Not only does the speaker get a doubling of the receptive channels—the visual added to the auditory—but the progressive adding of each element to the structure of the drawing drives home, piece by piece, a thing not quickly or completely grasped as a whole from a previously prepared, complete drawing. In teaching the medical student the primary requisite is to keep him awake; obviously you cannot teach anything to a sleeping man. Like the exhaust of the airplane the patter of words of a read paper is soporific. Chalk-talking arouses the drowsy. When a late-hour student seemed to be on the verge of succumbing, he could be brought back by speeding up the drawing or by changing to a correlated subject. For example, the sleepy student could not resist a chalk demonstration of tracheotomy, in which the patient, first shown as apparently dead of asphyxia, is changed by a few strokes to a smiling, grateful patient, and is quoted as saying, 'Thank you, Doctor Jackson.'" (From *The Life of Chevalier Jackson—An Autobiography*. Macmillan Company, New York, 1938.)

# COURSES AND CAREERS

## ENROLMENT IN MEDICINE

The total number of names in the *Medical Register* on January 1, 1958, was 89,336, an increase of 2,133 on the previous year and of 6,341 on the average for the last ten years. The number on the local *Register* for England was 43,192, or 48% of the whole; for Scotland 21,545; and for Ireland 11,768. The Commonwealth and Foreign lists contributed 11,071 and 1,760 respectively.

During 1957 the number added by registration was 3,226, to which must also be added 137 names restored. The number removed for various causes, principally death, was 1,230. These figures do not include persons provisionally registered (under section 17 of the Medical Act, 1956). The number so provisionally registered in 1957 was 2,229 and the total number provisionally registered on January 1, including those registered in previous years who had not yet gone on to full registration, was 2,831. Of the new provisional registrations 108 were in the Commonwealth list.

The following table gives the position on the *Register* at the end of the last ten years:

| Year | Added by | | Death or Removal | Total on Register |
|---|---|---|---|---|
| | Registration | Restoration | | |
| 1947 | 2,787 | 10 | 1,160 | 77,929 |
| 1948 | 3,968 | 16 | 5,621 | 76,292 |
| 1949 | 3,109 | 19 | 1,280 | 78,140 |
| 1950 | 3,160 | 45 | 1,123 | 80,222 |
| 1951 | 3,075 | 29 | 1,070 | 82,256 |
| 1952 | 4,493 | 46 | 2,881 | 83,914 |
| 1953 | 507 | 59 | 1,430 | 83,090 |
| 1954 | 2,222 | 152 | 1,565 | 83,899 |
| 1955 | 2,992 | 185 | 1,482 | 85,594 |
| 1956 | 3,113 | 116 | 1,620 | 87,203 |
| 1957 | 3,226 | 137 | 1,230 | 89,336 |

The high figures for removal in 1948 were due to the shrinkage of the temporary list following the passage of the Medical Practitioners and Pharmacists Act, 1947.

The training of medical students is shared between the teaching hospitals and the universities. In London the twelve undergraduate teaching hospitals, and elsewhere in England and Wales the ten teaching-hospital centres in association with the universities, are designated as teaching centres. In Scotland hospitals are not designated as teaching hospitals; they all come under the jurisdiction of the five regional hospital boards, but provision is made for inclusion on the boards of management of nominees of the university on which the region is centred. In Northern Ireland the duty is laid upon the hospitals authority—a body corporate—to provide Queen's University, Belfast, with adequate facilities for medical teaching. Examining bodies in the United Kingdom and Eire, with the qualifying, higher, and special degrees and diplomas in medicine they offer, are listed in the Table.

*Examining Bodies in the United Kingdom and Eire, Showing the Qualifying, Higher, and Special Degrees and Diplomas Offered in Medicine*

| Examining Body | Qualifying Degrees and Diplomas | Higher Degrees and Diplomas | Special Diplomas |
|---|---|---|---|
| 1. UNIVERSITIES | | | |
| *England:* | | | |
| Birmingham University | M.B., Ch.B. | M.D. Ch.M Ph.D. | |
| Bristol University | M.B., Ch.B. | M.D. Ch.M. Ph.D. | D.P.H. |
| Cambridge University | M.B., B.Chir. | M.D. M.Chir. | |
| Durham University | M.B., B.S. | M.D. D.Ch. D.Hy. | D.P.H. D.P.M. |
| Leeds University | M.B., Ch.B. | M.D. Ch.M. Ph.D. | D.P.H. D.P.M. |
| Liverpool University | M.B., Ch.B. | M.D. Ch.M. M.Ch.Orth. M.Rad.(D. or T.) Ph.D. | D.P.H. D.T.M.&H. D.M.R.(D. or T.) |
| London University | M.B., B.S. | M.D. M.S. | Dip.Bact. D.P.H. D.P.M. D.C.P. D.T.M.&H. Dip.Appl.Paras. &Ent. |
| Manchester University | M.B., Ch.B. | M.D. Ch.M. | D.P.H. D.P.M. |
| Oxford University | B.M., B.Ch. | D.M. M.Ch. | |
| Sheffield University | M.B., Ch.B. | M.D. Ch.M. | D.P.H. Dip.Microbiol. |
| *Scotland:* | | | |
| Aberdeen University | M.B., Ch.B. | M.D. Ch.M. Ph.D. | D.P.H. |
| Edinburgh University | M.B., Ch.B. | M.D. Ch.M. | D.P.H. D.T.M.&H. Dip.Psych. D.M.R.D. D.M.R.T. |
| Glasgow University | M.B., Ch.B. | M.D. Ch.M. Ph.D. | D.P.H. |
| St. Andrews University | M.B., Ch.B. | M.D. Ch.M. | D.P.H. |
| *Wales:* | | | |
| University of Wales | M.B., B.Ch. | M.D. M.Ch. Ph.D. | D.P.H. D.T.C.D. |
| *Northern Ireland:* | | | |
| Queen's University, Belfast | M.B., B.Ch., B.A.O. | M.D. M.Ch. M.A.O. | D.P.H. |
| *Eire:* | | | |
| Dublin University | M.B., B.Ch., B.A.O. | M.D. M.Ch. M.A.O. | D.P.M. D.G.O. |
| National University of Ireland | M.B., B.Ch., B.A.O. | M.D. M.Ch. M.A.O. Ph.D. | D.P.H. D.P.M. D.C.H. |
| 2. CONJOINT BOARDS | | | |
| *England:* | | | |
| Royal College of Physicians of London<br>Royal College of Surgeons of England | M.R.C.S., L.R.C.P. | | D.A. D.C.H. D.I.H. D.L.O. D.M.R.D. D.M.R.T. D.O. D.Path. D.Phys.Med. D.P.H. D.P.M. D.T.M.&H. |
| *Scotland:* | | | |
| Royal College of Physicians of Edinburgh<br>Royal College of Surgeons of Edinburgh<br>Royal Faculty of Physicians and Surgeons of Glasgow | L.R.C.P.Ed., L.R.C.S.Ed., L.R.F.P.& S.Glas. | | |
| *Eire:* | | | |
| Royal College of Physicians of Ireland<br>Royal College of Surgeons in Ireland | L.R.C.P.&S.I. | | D.P.M. D.O.M.S. D.A. D.C.H. |
| 3. COLLEGES | | | |
| *England:* | | | |
| Royal College of Physicians of London | | M.R.C.P. F.R.C.P.* | |
| Royal College of Surgeons of England | | F.R.C.S.† | F.F.A.R.C.S. |
| Royal College of Obstetricians and Gynaecologists | | M.R.C.O.G. F.R.C.O.G.* | D.Obst.R.C.O.G. |
| *Scotland:* | | | |
| Royal College of Physicians of Edinburgh | | M.R.C.P.Ed. F.R.C.P.Ed.* | |
| Royal College of Surgeons of Edinburgh | | F.R.C.S.Ed. | |
| Royal Faculty of Physicians and Surgeons of Glasgow | | F.R.F.P.S.Glas. | D.I.H. D.C.H. |
| *Eire:* | | | |
| Royal College of Physicians of Ireland | | M.R.C.P.I. F.R.C.P.I.* | |
| Royal College of Surgeons in Ireland | | F.R.C.S.I. | |
| 4. OTHER BODIES | | | |
| *England:* | | | |
| Society of Apothecaries of London | L.M.S.S.A. | | M.M.S.A. D.I.H. |
| *Eire:* | | | |
| Apothecaries' Hall of Ireland | L.A.H.Dubl. | | |

* By election without examination. † In ophthalmology or oto-rhino-laryngology, as well as general surgery.

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**1** (*Bufferin in the Management of Rheumatoid Arthritis, J.A.M.A.* 158:386 (*June* 4) 1955.)

**2** (*The Neutralization of Gastric Acidity with Basic Aluminium Aminoacetate, J. Pharmacol. and Exper. Therap.* 82:247 (*Nov.*) 1944.)

**3** (*In Vitro Differences Between Dihydroxy Aluminium Aminoacetate and Dried Aluminium Hydroxide Gel, J. Am. Pharm. Assoc., Sc. Ed.* 41:361 (*July*) 1952.)

**4** (*Effect of Buffering Agents on Absorption of Acetylsalicylic Acid, J. Am. Pharm. Assoc., Sc. Ed.* 39:21 (*Jan.*) 1950.)

**5** (*The Pharmacologic Principles of Medical Practice*, ed. 3, *Balto., The Williams & Wilkins Company*, 1954, *p.* 593.)

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The total number of students who were admitted to medical schools for premedical studies (physics, chemistry, and biology) in 1957 was 1,456, and the total number of students beginning the period of preclinical studies was 2,192. By far the largest number was in the University of London (623), the next largest being in the University of Cambridge (203), the University of Glasgow (145), and the University of Edinburgh (137).

### Fees for Registration

The fees payable to the General Medical Council (44, Hallam Street, London, W.1) for registration under the Medical Acts are five guineas on provisional registration, and six guineas on full registration in the case of a person already provisionally registered, or eleven guineas in the case of any other person.

## UNDERGRADUATE EDUCATION

Below we give, by courtesy of the respective deans, some account of the various undergraduate schools, and of developments and events, past or prospective.

### LONDON MEDICAL SCHOOLS

#### Building Extension at King's

At *King's College Hospital Medical School* Stage II of the new extension will be ready for occupation this term. Stage I, which was completed last November, provides on the top floor accommodation for the new medical unit under the direction of Dr. Clifford Hoyle, on the middle floor a practical pathology laboratory, and on the ground floor additional rooms for student amenities. Stage II will contain on the top floor an extension to the department of chemical pathology, consisting mainly of research laboratories. The middle floor, again consisting mainly of research laboratories, will provide accommodation for the new surgical unit under the direction of Mr. Harold C. Edwards. On the ground floor there will be a clinical lecture theatre. Adjacent is a room for clinico-pathological demonstrations, and on the same floor a student health consulting-room with dressing-rooms, rooms for medical and surgical tutors, and a council room. The school admits clinical students for the London, Oxford, and Cambridge degrees. The dental school provides courses for the B.D.S. degree and the L.D.S. diploma. Each year 50 medical and 25 dental students are admitted. Students for the London degrees do their preclinical training at King's College, London, where they have the advantage of association with students of all faculties. King's College Hospital has 550 beds (including Belgrave Hospital for Children). It is situated in the heart of a large residential area and it has one of the busiest out-patient departments in London, with an ample supply of clinical material. King's College Hall is within five minutes' walk, and it is still fairly easy to find comfortable lodgings in the vicinity. The school has the use and clinical control of 200 medical, surgical, and obstetric beds for undergraduate teaching at Dulwich Hospital, where some of the consultant staff have been appointed associate teachers in the medical school. The arrangements whereby students gain first-hand experience of general practice have been extended. At their discretion individual students can now spend up to one week in residence with a general practitioner, the school bearing a part of the cost.

*Charing Cross Hospital Medical School* has during the past year acquired additional accommodation in Bedford Street which is being used to provide a more spacious library and increased room for student amenities. In the main building, laboratories are being constructed to house a newly instituted professorial unit of obstetrics and gynaecology. Readerships have been established in pharmacology and anatomy. In the recent final M.B., B.S. examination all who presented themselves for the examination in medicine were successful, and in addition the school gained the only two honours awarded in the university for surgery.

At *St. George's Hospital Medical School* excellent progress has been made with the work of modernization and rebuilding. The main work on the laboratories and general school premises should be completed by the end of this calendar year. University approval has been given for the establishment of a chair in medicine, and it is hoped to make an appointment to take effect in July, 1959. The reconstructed sports grounds should be in full use in the coming academic year.

#### Plans for St. Mary's

*St. Mary's Hospital Medical School* has received approval from the University of London for the first stage of the extension of its building, and it is expected that work will be started in December. The extension has become possible as a result of the money raised by the school's centenary appeal four years ago and also a generous gift by the Wellcome Trustees. The university is providing the balance of the cost of the building, which, when it is completed in about three years' time, will greatly improve the teaching and research facilities of the preclinical and clinical departments. The number of applications for admission to the school continues greatly to exceed the number of places, and much time is spent by the selection committees in interviewing candidates. The Academic Board has decided to reduce the time spent on the introductory clinical course from ten to three weeks, and a committee is examining the curriculum with a view to other possible changes in the preclinical and clinical courses. Princess Margaret honoured the musical society by attending a performance of *The Pirates of Penzance* last year.

At the *Royal Free School of Medicine* 54 students qualified during the year, of whom two gained honours. Extracurricular student activities have included an ambitious but successful production by the Dramatic Society of Arthur Miller's play *The Crucible*. This was taken to France in the Easter vacation, under the auspices of the Central Bureau for Educational Visits and Exchanges, a performance being given for the staff and students of Lille University. In athletics the school has provided four members of the university women's eight, and the same four rowed in the British women's eight which competed in the European Championships. One of the third-year students, who is captain of the University Women's Athletic Club, and English women's cross-country champion, was placed second in the mile in the Women's A.A.A. Championships this season. The school has been well represented on the committee of the University of London Students' Union, first by last year's vice-president and this year by the secretary. A feature of the year has been the increasing interest shown by senior clinical students in the school's voluntary scheme of training in general practice. Some forty students have attended local practices either continuously for a fortnight, or once a week over a three-months period, and on present showing it seems that attendances next year are likely to be even more numerous.

*University College Hospital*, together with its sector hospital at St. Pancras, now has a minimum of 1,000 beds, and the closely adjacent St. Pancras Hospital is being increasingly used for the clinical teaching of undergraduates. The new Rowland Hall is used a great deal for both clinical lectures and social activities such as concerts and dances. The hard tennis courts at St. Pancras are also proving a boon to students and the nurses. The sports ground with its new pavilion at Hendon is being used fully, and possible extensions are being considered. With the rebuilding of the dental school it is hoped to provide a new student house to accommodate the social facilities for both medical and dental students. This should prove to be an invaluable asset to the respective student bodies. There is no lack of applicants for either medical or dental places in the school, and much time and thought is given to the selection of students. 103 students are now able to live on medical school premises.

The preclinical departments of *St. Bartholomew's Hospital Medical College* are situated in Charterhouse Square, with modern laboratories which provide full teaching and research

facilities. There is also a resident hostel for 100 students. At the adjoining hospital adequate facilities are available for instruction in all subjects, including pathology and midwifery. Over a hundred resident appointments are made to the hospital staff each year from students who have passed their qualifying examination. Each quarter clinical appointments are available for undergraduates from the preclinical departments and from the Universities of Oxford and Cambridge. Scholarships and prizes to the value of £2,000 are awarded annually.

### New School for the Middlesex

The *Middlesex Hospital Medical School* provides a full medical education, including instruction in chemistry, physics, and biology for the London first M.B. Students are, however, admitted direct to second M.B. classes if they have exemption from the first M.B. examination, and those who have carried out their preclinical courses at the Universities of Oxford or Cambridge may join the school for the clinical period alone. Recently the school authorities have been planning the rebuilding of the premedical and preclinical departments. A site has been obtained very near the present buildings, and at the end of last year work started on the first section of the new school. By September, 1959, this first section should be complete, and will provide teaching laboratories and departmental lecture theatres, in addition to a special large theatre which can be adapted to take a stage and so give valuable facilities to the students' musical, choral, and dramatic societies. The next section will contain research laboratories, professorial and administrative rooms, and a large dining-hall which will eventually look out on to a terrace and open space in the centre of the block of buildings. The final section will be the residential college with accommodation for 175 students and containing common-rooms, squash courts, music room, billiards room, games room, etc., available to all students of the school. There has for many years been an excellent sports ground at Chislehurst. Premedical and preclinical students enter the school in October only, clinical students in April or October. The number of applications received each year is very high, and prospective candidates are advised to apply about two years in advance of the date at which entry is required. The Student Health Service, run by a member of the consultant staff, includes a complete medical examination during the first year in the school and chest radiographs. Otherwise the service is advisory and the student may seek advice at any time during his course. Accommodation is being provided for the health service in the new building, where it will be more conveniently and adequately housed than at present. Finally, on qualification there are a number of pre-registration house appointments reserved for students of the school. More senior appointments, including many in the research departments of the school, are also available.

*St. Thomas's Hospital Medical School* provides the full course for the London M.B., B.S. degree, including the premedical year in the basic sciences. Competition for places remains very keen, and students should apply for entry as soon as they have taken their ordinary levels of the G.C.E. and not later than the end of July of the year preceding that of the proposed date of entry. Students of good academic ability who have taken their G.C.E. advanced subjects in the arts are welcomed into the first or premedical year. Clinical students from the Universities of Oxford and Cambridge are admitted in October and April. They should apply for entry during their first year at the university. Entrance scholarships are available for both preclinical and clinical students; they all qualify for the Ministry of Education's supplementary awards. Other scholarships are available to help those who do well in the second examination for medical degrees to take an honours B.Sc. degree in physiology or anatomy. There are a wide variety of prizes for annual competition, and many preregistration and research appointments are available after qualification. In the clinical period particular stress is laid on work in wards and out-patients, formal lectures being kept to a minimum. The school has a good club with the usual facilities and an extensive athletic ground at Cobham, Surrey, some 45 minutes' journey. All ordinary team games are well catered for, and there are flourishing rowing and sailing clubs. The school has enjoyed a very successful year in games, winning the rugger, hockey, fencing, and rowing inter-hospital trophies. The arts are actively encouraged. There are choral, photographic, dramatic, and art societies. Instrumentalists can join the hospital's symphony orchestra, which rehearses at the school. There is a summer play and a Christmas revue, which forms a major event in the winter. Individual clubs hold dances during the year, and there is a summer ball every other year at the Festival Hall. The Medical and Physical Society, dating back to 1771, holds clinical meetings in the winter and invites speakers distinguished in fields outside medicine. The entire hospital is going to be rebuilt, and in such a way that work will suffer no interference. A beginning has already been made.

At *Guy's Hospital Medical School* the first three years of preclinical studies are designed to prepare the student for the clinical work which will follow, and there is a close link between the departments of the school and the hospital. Oxford and Cambridge students are admitted for the three clinical years. The aim has always been to encourage responsibility from the moment the student enters on ward work. A three-monthly series of clerkships is arranged in the general wards and in special departments, so that students accept supervised responsibility for patients, and the emphasis is on bedside and out-patient teaching rather than on organized lectures. There are lectures and demonstrations organized which cover the whole field of medicine, surgery, obstetrics, paediatrics, anaesthetics, and other subjects. Pre-registration appointments are available for the newly qualified.

### Westminster Medical School

At *Westminster Medical School* the number of clinical students remains constant at about 200. This is the optimum number, having regard to the clinical facilities available in the Westminster teaching group. The applications for admission show a slight decline, but the standard of those accepted is at least as high as in the past. The number of students who qualified with medical degrees in 1957 was a record for the school. The Westminster teaching group comprises: Westminster Hospital (430 beds), in which clinical practice in general medicine, surgery, and obstetrics is undertaken (the orthopaedic, ophthalmic, and ear, nose, and throat departments are also in the main hospital), the Gordon Hospital (100 surgical beds), the Westminster Children's Hospital (120 beds), and All Saints' Hospital (50 beds) for the practice of gynaecology and urology. A close affiliation with St. Stephen's Hospital provides very valuable additional clinical practice in medicine. Instruction in practical midwifery is also given at St. Stephen's Hospital, the Nelson Hospital, and St. Teresa's Hospital, and in fevers at the Western Hospital, Fulham. Under a voluntary scheme students may reside for a fortnight with general practitioners to see the work of their practice. Special instruction in tuberculosis is provided by a fortnight's residence at the King Edward VII Sanatorium, Midhurst, and the teaching of mental diseases is carried out at the Netherne Hospital, London, S.W.17. 40 vacancies a year in the Westminster Hospital teaching group have been recommended for preregistration posts, and competition for these is keen. A new laboratory has been provided for the chemical pathology department. A department of experimental surgery has been organized where already some notable research work has been carried out. An additional medical firm has recently been instituted at the Gordon Hospital. The new sports ground at Cobham, Surrey, has been an unqualified success, and the improved facilities have been reflected in a higher standard of play and a large number of successes in all outdoor sports.

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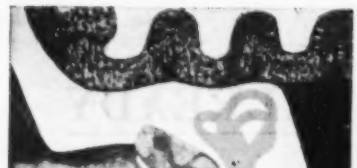

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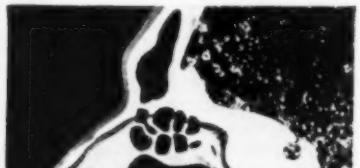

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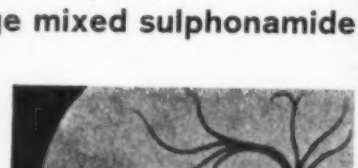

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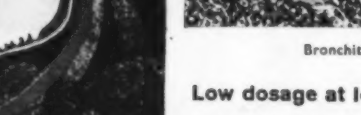

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The tutorial system both in the preclinical and in the clinical periods has been extended at the *London Hospital Medical College*, and continues to provide a useful method of linking the various parts of the curriculum. The departments of physiology and anatomy now regularly run B.Sc. (special) courses in physiology and anatomy, and scholarships are given as a result of the second M.B. examination to enable suitable candidates to take part in these courses. The number of applications at the London during the past year remained high. Application can be made at any time after the student has reached the age of 16 or has passed the general certificate of education at ordinary level, whichever is the earlier. Applicants are interviewed as soon as possible after they apply, and they are told of the result of the interview within a few days. This policy is still proving of value, as applicants are not left in uncertainty about their chances of obtaining a place. Applicants who are unable to obtain first M.B. exemption at school spend one year at Queen Mary College, but the number who need to do this steadily decreases. For entry to Queen Mary College for first M.B. work students must satisfy university entrance requirements, but applications to go there should be made through the London Hospital Medical College. In cases where the applicant from school is able to proceed to either Oxford or Cambridge the place offered for the whole course becomes automatically transferred for clinical work at a later date.

Research facilities at the London continue to expand in both the preclinical and the clinical field. New laboratories for clinical research under the direction of the medical and surgical units have been opened and are proving of great value. They have a close association with the newly established professorial departments of biochemistry and experimental biochemistry, ensuring that the highest standard of chemical advice will be available to workers in the clinical field. Junior research fellowships have been established by the college, the tenure of which normally is one year, so that graduates who have done their house appointments may gain experience in and have opportunities for original research under supervision. At the London there has been no difficulty in getting pre-registration appointments for all the newly qualified graduates, and the majority are able to hold at least their first appointment at the teaching hospital. The athletic side of the college has been greatly helped by the opening of a new pavilion at the sports ground at Hale End.

The *West London Hospital Medical School* is recognized by the Universities of Oxford and Cambridge for the undergraduate clinical course and it is hoped that the University of London will shortly restore the recognition which the school previously held. In view of the proposed amalgamation of the hospital and school with Charing Cross no more new students will be accepted after October of this year, but there will still be some facilities for students revising for the qualifying examinations.

## THE SOCIETY OF APOTHECARIES

The Society of Apothecaries of London (Apothecaries Hall, Black Friars Lane, E.C.4) confers the diploma L.M.S.S.A.Lond., registrable under the Medical Act, 1886. Examinations for the final subjects are held monthly, except in September; and in anatomy, physiology, and pharmacology in January, April, July, and October.

## OXFORD AND CAMBRIDGE ENTRY

### Oxford

At present there is no quota for medical students in the University of Oxford; the preclinical entry is about 75 per year, of whom about 12 may be women. Some of the colleges have formed themselves into groups for the purpose of considering applicants to read medicine, and the following extracts from the *Oxford University Gazette*, June 13, explain the position: "University, Balliol, Trinity, St. John's, and Jesus Colleges and St. Peter's Hall will act as a group in considering candidates for admission to read medicine. Candidates should apply in the normal way to the college of their first choice, but will subsequently be asked if they wish to be considered at the same time by the other colleges. The examination for these candidates will be held on March 23–25, 1959," and "Candidates for admission to any of the colleges, Exeter, Oriel, Magdalen, Brasenose, Corpus Christi, Pembroke, and Worcester Colleges should apply in the usual way, but will subsequently be asked if they wish to be considered also by the six other colleges named above. If they do so wish, they will be allowed to place these in order of preference: and their application will then be considered by each college in turn."

The medical course lasts six and a half years, of which three and a half are devoted to the study of the preclinical subjects. At the end of the second year the first B.M. examination in organic chemistry, anatomy, and physiology is completed, so that the third year may be devoted to reading for the B.A. degree, usually in the honour school of animal physiology. All students who read medicine at Oxford, with the one exception outlined below, must qualify for the B.A. degree before proceeding to complete the examinations for the degree of B.M., B.Ch. The course for the honour school of animal physiology is followed by two terms spent in the study of general pathology, bacteriology, pharmacology, and principles of therapeutics. The remaining three years are devoted to the clinical subjects either at Oxford or at one of the London teaching hospitals or elsewhere.

The university clinical school is situated in the United Oxford Hospitals (the Radcliffe Infirmary, the Churchill Hospital, the Oxford Eye Hospital, the Slade Hospital for Infectious Diseases, the Osler Hospital (for chest diseases), and the Cowley Road Hospital), which together make up the teaching hospital group and comprise a total of about 1,300 beds. In addition the Nuffield Orthopaedic Centre (Wingfield–Morris Hospital) provides a further 234 beds and the mental hospitals under the regional board provide 1,145 beds. An extensive building programme is being carried out which will extend existing facilities for teaching and research and will provide new laboratories and wards for many of the professorial departments which were established following the generous benefactions of Lord Nuffield in 1936. In the Radcliffe Infirmary a new department for the Nuffield professor of clinical medicine with 50 beds is now in use and adjacent laboratories will be completed shortly. Twin theatres and laboratories have been built for the Nuffield professor of surgery, Professor P. R. Allison, and two wards in the Radcliffe Infirmary have been converted for his use. The regius professor of medicine, Sir George Pickering, has his own beds in the Radcliffe Infirmary, and new laboratories have been provided for him in the Infirmary. Plans have been prepared for new departments of anaesthetics, biochemistry, and pathology, and for enlarging the *x*-ray department and the out-patient block.

Even with the development of these new academic departments for teaching and research, and the provision of an increased number of teaching beds in the Radcliffe Infirmary, the university does not intend to increase the size of the clinical school, which will remain limited to an intake of 32 a year. The majority of the students are drawn from the preclinical departments of the university, but some are admitted from other universities. In the past all external students have read for the degree of their parent university. Most will continue to do so, but a university statute now makes it possible for selected students from other universities to apply to take the Oxford B.M. degree without having taken the preclinical course at Oxford or the Oxford B.A. Students from other universities in the United Kingdom and overseas who apply to read clinical medicine in Oxford and take the Oxford B.M. under the new regulations must have spent three years in the study of the preclinical sciences, have passed an examination equivalent to the first B.M. in anatomy and physiology, and have obtained an honours degree in the arts or sciences.

The aim of the university in limiting the number of clinical students is to ensure that each gets the maximum amount of personal instruction so that the scientific approach to the problems of medicine and the habit of independent thought, which is the hallmark of the honours course in physiology, can be fostered during the period of clinical study. The small size of the school makes it possible for each student to have a personal tutor and ensures that all have direct access to a large number of patients. Now that the pre-registration year has become part of the training of a medical student a further advantage that accrues from limiting the intake is that almost all who qualify from the United Oxford Hospitals can be sure of obtaining a pre-registration post in their own teaching hospital.

### Cambridge

At the University of Cambridge the number of candidates wishing to study medicine continues to exceed the number of places available, and all college entries are subject to a university quota.

Two changes have been made in the regulations for the final M.B. examination. The first relates to the period of clinical instruction in midwifery and gynaecology. The regulations are amended so as to specify requirements of (*a*) six months' instead of three months' clinical training; (*b*) two months' instead of one month's residence in a maternity hospital; and (*c*) instruction in antenatal and postnatal care. Students who began their clinical training before October 1, 1956, however, will be allowed to proceed to the final M.B. examination on producing evidence satisfying the midwifery and gynaecology requirements previously in force.

The second change is designed to permit undergraduates who by the end of their second year's residence have obtained honours in the natural sciences tripos and have qualified in anatomy and physiology and who wish to undertake a course of non-medical study during the third year in Cambridge, to take the final M.B. examination at the same time as their contemporaries who devote three years to the tripos and qualifying examinations. The requirement that a candidate for either part of the final M.B. examination shall produce evidence of having completed five years of medical study has been amended to restrict the requirement to Part II only of that examination. The Cambridge medical student normally completes three of these five years as an undergraduate in residence, and on October 1 following graduation begins clinical studies at a recognized hospital. If, in the circumstances mentioned, the third year is devoted to non-medical study the student will begin hospital training with two years' medical study only to his credit, but will be allowed to count as part of his third year of medical study after graduation the period of three months during which he attends the long vacation course in elementary clinical methods. He will then be able to take Part I of the final M.B. (pathology and pharmacology) in the December of his third academical year at hospital and Part II (medicine, surgery, and midwifery and gynaecology) in the following June, if he begins hospital training in the July immediately following his qualification for the B.A. degree either in his clinical school or by taking the long vacation course in clinical methods in Cambridge.

## TEACHING-HOSPITAL CENTRES IN ENGLAND AND WALES

### Birmingham Medical School

The number of applicants wishing to enter the University of Birmingham Medical School greatly exceeds the number of places available, and requests for admission should be made by April of the preceding year for entry to both first- and second-year courses. Applicants in the United Kingdom are interviewed as soon as possible and told the result of the interview within a few days. There are 14 places available annually for first-year courses (students from the Colonies or Dominions are generally required to enter upon first-year courses), and about 100 places per annum for men and women for second-year courses. Ten scholarships are available for selected students to spend an extra year to take the B.Sc. course in the honour school of either anatomical or physiological studies. Students from Oxford, Cambridge, and other universities are encouraged to study clinical subjects at Birmingham. Two interesting scholarships provide the opportunity of spending three months in residence in either East or West Africa, principally to gain experience in tropical medicine, although part of the time might be spent in some other clinical department. Advanced clinical students may spend some time with selected general practitioners, and a prize has recently been instituted as an award for an essay bearing on some topic of general practice.

The entire curriculum is under review, and an attempt is being made to integrate, so far as possible, the teaching provided by the several departments.

The library service within the medical school is an excellent one in that not only have students access to one of the largest collections of up-to-date medical literature in the provinces, but the resources of the whole university library are open to them. Sport at Birmingham is organized by students through the Guild of Undergraduates, and students may join, without further subscription, any of 30 clubs. Sailing and rowing excepted, all facilities lie within 400 yards of the medical school.

### New Teaching Hospital for Sheffield

The recent laying, by Queen Elizabeth the Queen Mother, of the foundation stone of a new out-patient department for the United Sheffield Hospitals seems to indicate definite progress towards the ultimate provision of a complete new teaching hospital. New university building has not so far greatly affected the Sheffield Medical School, although a generous grant from the Rockefeller Trustees has furthered the activities of the department of microbiology. Assistance from the Sheffield Town Trustees has enabled the university to take a larger share in developing the department of psychiatry, while the building by the United Sheffield Hospitals of the new Whiteley Wood Clinic (an extension of the idea of a psychiatric wing within a general hospital) has also greatly assisted the department.

The discussions regarding the curriculum, referred to last year (*Journal*, September 7, 1957, p. 575), are expected to bear fruit next summer in the shape of considerable changes in the clinical part of the course. The arrangements for the various clerkships and dresserships will be modified, the orientation towards examinations and the timetable will be considerably altered, and two "elective periods" will be introduced. Partly in order to assist the students in the arrangement of their work during these periods, Dr. I. B. Sneddon has been nominated as director of clinical studies. A pilot experiment relating to the development of a tutorial scheme already shows much promise of success. Professor R. P. Jepson has resigned from the chair of surgery to go to Adelaide University; Professor W. Hobson from the chair of social and industrial medicine to take up a W.H.O. appointment in Copenhagen; and Dr. J. Pemberton from the same department on his appointment as professor of social medicine in Queen's University, Belfast. The future of the department of social and industrial medicine in Sheffield is now being considered by the university.

### Liverpool's New Medical School

At Liverpool University the outstanding event of the year was the official opening of the new medical school by Queen Elizabeth the Queen Mother, an account of which was given in the *Journal* of May 17 (p. 1172). The new building houses the research laboratories of the departments of medicine, obstetrics and gynaecology, pathology, bacteriology, pharmacology and general therapeutics, and radiodiagnosis, six tutorial classrooms, three lecture theatres, two large class laboratories, museums, the dean's offices, a staff common

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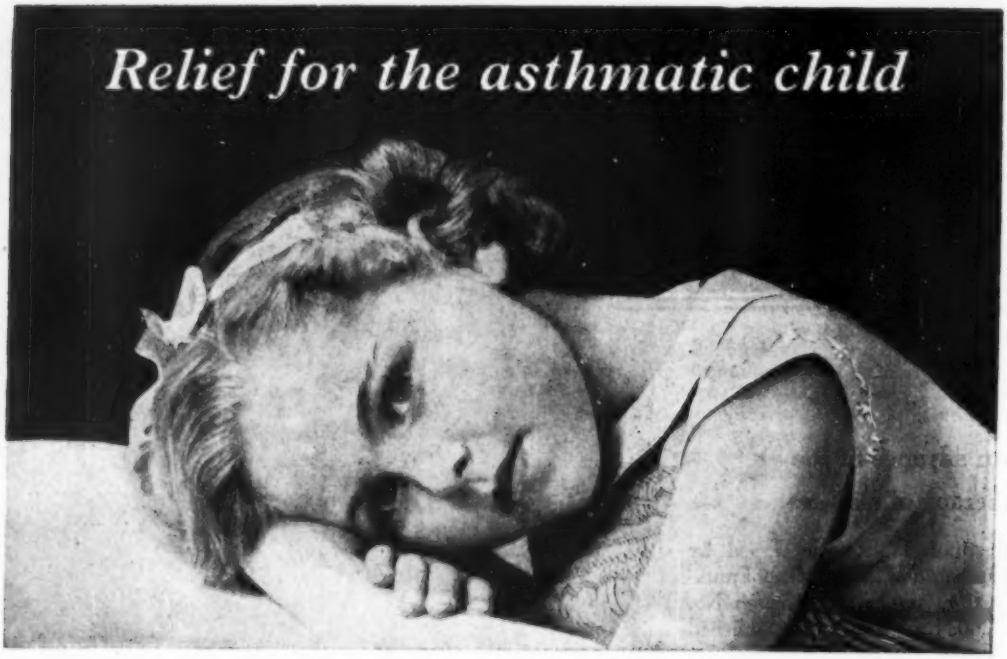


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room, and a committee room. 91 new students were admitted to the M.B. course last October, and of these 42 entered the first year and 49 the second year. The number of applications for admission is slightly fewer than in previous years, but competition is still keen and a full complement of students will begin their studies this October. There have been no changes in the requirements for exemption from the first M.B., and passes at the advanced level in chemistry, physics, and biology (or botany and zoology) are still needed. The General Medical Council's new recommendations on the medical curriculum are receiving attention, but no changes have as yet been made.

A full-time readership in medicine has been established, and Dr. C. A. Clarke appointed to the post. Professor T. N. A. Jeffcoate is visiting Canada, U.S.A., and the West Indies as Sims-Black Commonwealth travelling professor in obstetrics and gynaecology. Professor R. M. Gordon, who has been a professor in the Liverpool School of Tropical Medicine since 1930, is retiring from the chair of entomology and parasitology after long and distinguished service, and Mr. A. McKie Reid from the post of lecturer-in-charge of the department of ophthalmology. Also, during the session Dr. Robert Coope, Mr. Hugh Reid, and Mr. John McGibbon have retired after long and devoted service as teachers in the clinical school.

### Department of Psychiatry at Leeds

At the Leeds University new premises for the department of psychiatry were opened in January. They are in Hyde Terrace, adjacent to the department of biochemistry. Three large houses have been converted for the use of the department and provide administrative, library, research, and teaching accommodation, and also accommodation where patients can be seen. While it remains the long-term plan to provide this accommodation within the teaching hospital, in the meantime these new premises add greatly to the facilities available to the department. The building of the Martin Wing of the teaching hospital is well advanced and it is hoped that the full-time professorial units of medicine and surgery will be able to move into their new accommodation before the end of the coming session.

No major changes in the curriculum have been made during the last year, nor are any likely in the immediate future, though consideration is being given to entry requirements and the content of the premedical part of the course. There has been only a small reduction in the number of applications for entry, which continue to exceed the number of places available.

### New Regulations at Manchester

The most important change is that new regulations have been introduced for the first M.B., Ch.B. examination. From October candidates who have passed in chemistry, physics, and biology (or zoology) at the advanced level of the G.C.E. will be entitled to exemption from the first M.B., Ch.B. examination and eligible for admission to second-year courses. Such candidates will be able to complete the full course for the degrees of M.B., Ch.B. in a minimum of five years.

A pilot scheme has been introduced to provide additional opportunities for students to obtain training and experience in general practice. With the help of the local Faculty of the College of General Practitioners, students have been attached to selected general practitioners, and the scheme has been very successful.

### Residential Accommodation at Durham

At Durham University the extensions to the department of anatomy and to the animal house are nearing completion, and the additional accommodation which they will provide should be ready for occupation by the end of September. As part of the general college plan to provide more residential facilities for students it is hoped to start work next year on a new hall of residence for 225 male students, while in the near future conversion and additions to the present buildings should provide accommodation for an additional 80 women students. King's College has also rented a large hostel from the Ministry of Pensions and National Insurance which, after renovations have been completed, should accommodate an additional 500 male students by next October. The hostel will be known as the Eustace Percy Hall, after the late Rector of King's College.

Once again the Medical Students' Council has been most active in representing the interests of medical students both in the college and on the British Medical Students' Association. Mr. Peter G. Wood has been elected president of the British Medical Students' Association. The Medical Athletic Union and the Medical Society completed a full programme of sporting events, visits, lectures, and social activities.

### Bristol's Plans

The planning of the new medical school at Bristol University has been completed, and building is expected to start in the autumn. The number of applications for the undergraduate course in medicine has remained at the same high level as for the last several years. Major alterations are now taking place in the teaching hospital to improve the clinical facilities and accommodation for students. Some modifications in the medical curriculum have been introduced, mainly with the purpose of allowing a greater amount of voluntary attendance in lecture courses.

### Welsh National School of Medicine

The school sustained last year a serious loss in the death of Lord Aberdare, its president for many years. The court of the University of Wales has elected Sir Clement Price Thomas to succeed him.

During the past year the details of the schedules of accommodation for the new teaching centre in Cardiff have been agreed with the Welsh Board of Health. It may be some time before building can start, but there is every hope that an architectural competition will soon be announced for a centre where educational and hospital accommodation is to be completely integrated. In the meantime the school is proceeding with the building of a dining hall and library, which will have the effect of improving amenities for students. Additional houses have also been acquired, so that hostel accommodation will be adequate for all those who desire it. The school authorities, like many others, are engaged in revising the curriculum, but, although it is not likely that this will be completed for some time, improvements are being made especially in the direction of correlating teaching in the different departments. The student health service of the University of Wales, which is administered by the medical school, is extending its activities, and it is hoped to provide more and better accommodation.

During the past year a careful review of the pre-registration appointments in the Welsh Region has been made, with a view to ensuring that times spent in them is a real extension of medical education, and for this the co-operation of the regional consultants is being enlisted. The school has received many visits from visiting societies, and the lectures in connexion with these have proved stimulating to both undergraduates and postgraduates. Invitations have also been received by several members of the staff to visit countries and universities abroad, which the school regards as a most valuable means of extending its influence and reputation.

## SCOTTISH SCHOOLS

### Edinburgh University

At the University of Edinburgh the past year has been one of continuing activity. The number of applicants for admission to the M.B., Ch.B. course this year remains high in relation to the number of places available. Those applying for admission for the course beginning in October, 1959, should submit their applications to the dean of the faculty by December 31. A limited number of undergraduate

bursaries and scholarships are available to students in the faculty of medicine for advanced courses of study—for example, an honours course of instruction for the B.Sc. degree.

### Extensions at Glasgow

At Glasgow University plans are well advanced for the building which will house the new department of virology and also an extension to the genetics department. It is hoped that the new building will be available for occupation in two years' time. A start is expected to be made this year on a new unit for experimental surgery. The number of applications for admission to the medical school is very similar to that of last year. It is still in excess of the number of available places. The most important staff changes are the promotion of ordinances for the institution of chairs in orthopaedics and in infectious diseases. The junior teaching staff has been augmented by several additions in the lecturer grade.

### Aberdeen University

At Aberdeen University the curriculum for the degrees of M.B., Ch.B. extends over six academic years. Courses in the premedical and preclinical subjects are given in departments located in Marischal College and in Old Aberdeen, which provide instruction for science as well as medical students. Laboratory and lecture courses in the three clinical years are conducted in the university buildings on the Foresterhill site, where the main hospitals are, and clinical instruction is given in all the hospitals in Aberdeen. The number of students for admission continues to tend to fall, but it is still above the number of places available. An increasing number of applications are coming from overseas students in various parts of the Commonwealth.

During the year a building to accommodate a special research department in clinical midwifery was completed and opened officially in April. It is staffed by the Medical Research Council, and its honorary director is the professor of midwifery. Plans have been prepared for a new medical physics building on the Foresterhill site, but work on it is unlikely to start until early next year.

A new medical ordinance promoted by the four Scottish universities has been approved. It permits certain candidates for admission to the medical faculty to sit the professional examination in physics, chemistry, and biology without attending university classes in these subjects. Each university can make regulations for this purpose, but so far the University of Aberdeen has not done so. They consider that the time has come to review as a whole the ordinances which govern medical education in the four Scottish universities. These were made as long ago as 1911 and are so restrictive in character that they interfere seriously with the prevailing mood of medical educationists in seeking experiment. It is proposed that a conference of the Scottish universities should be held early next term to consider the question of preparing new ordinances.

### St. Andrews University

In the school of medicine of St. Andrews University instruction in the subjects of the clinical years of study is given in Dundee, while the premedical and preclinical subjects can be studied either at St. Andrews or at Dundee.

The annual intake of students to the faculty of medicine is limited to between 70 and 80 to ensure that the hospital facilities available are sufficient to allow of adequate clinical instruction being given to each undergraduate. The laboratory accommodation in both preclinical and clinical years has been recently extended and provides excellent facilities for students. There are at both centres excellent student residences which accommodate undergraduates from all or any of the faculties. Medical students in their early years are encouraged to reside in these, so that there is a width of contact among the undergraduates which is found to be of great educational value.

## NORTHERN IRELAND

### Queen's University, Belfast

The combined clinical course—a modified integrated curriculum—now enters upon its fifth year, and a committee has been sitting to review its results and to suggest modifications in the light of the new and more elastic recommendations of the General Medical Council. A new geriatric unit has been provided in one of the general teaching hospitals, and a new unit for the department of mental health in the same teaching hospital will be opened in the new year. The policy of attaching maternity students to general practitioners during part of their residential period has been most successful.

Professor Alan Stevenson has left to go to the Medical Research Council unit at Oxford and Professor J. Pemberton has been appointed to the vacant chair of social and preventive medicine. Dr. John Dundee, a Belfast graduate, has returned to head the new department of anaesthetics.

## MEDICAL EDUCATION IN EIRE

### Trinity College, Dublin

The entry of students has been restricted so that the numbers in the clinical years will probably not exceed 50 in future. The chairs of medicine and surgery are now full-time appointments. Clinical tutors in medicine and surgery have been appointed in the hospitals attended by school of physic students, under the direction of the clinical professors. Special arrangements for the teaching of paediatrics and for clerking in this specialty have been made jointly with the Rotunda and the National Children's Hospital. The professorial unit at the Rotunda Hospital has worked very satisfactorily during the past year.

The laboratories of anatomy, physiology, biochemistry, and pathology have undergone extensive alteration and reconstruction, with new equipment and increased facilities for research. Plans are being prepared for new accommodation for pharmacology. An extension of the chemistry building, now completed, provides greatly improved accommodation for premedical classes. Additional classes and demonstrations in pathology, bacteriology, and clinical biochemistry have been arranged in each of the hospitals; these are directed by the respective professors and carry on the systematic teaching of these three subjects up to the final academic year.

### National University of Ireland

The constituent colleges of the National University of Ireland are those of Dublin, Cork, and Galway.

At *University College, Dublin*, the total entry to the first medical year is limited to 100 students, who are admitted on the results of the premedical examination. The maximum number of students admitted from outside Ireland is 20. Before a student may present for the M.B., B.Ch., B.A.O. degrees he must have passed the prescribed examinations having attended the necessary courses—that is, premedical year and five-year medical courses. These courses consist in lectures and practicals given at the college and attendance at clinics in recognized hospitals. In addition to the M.B., B.Ch., B.A.O. degrees there are a number of postgraduate degrees and diplomas, for some of which courses are held. Several new chairs have been established in the medical school for the coming session. There are now two full-time professors of surgery and of medicine. In addition, a chair of microbiology as applied to medicine and a chair of pharmacology have been established, and the appointed professors will have taken up their duties by October.

For some years *University College, Cork*, has restricted its entry to 36 medical students, only two of whom may be from overseas. Selection is made by the premedical examinations. The school has reverted to the six-term period of study in anatomy, physiology, and biochemistry in preparation for the second M.B. The introductory clinical course

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has been abolished: instead, the department of physiology provides a course in clinical physiology in hospital during the last term; there is an introductory course in pharmacology; and the student receives instruction in elementary pathology, a question bearing on this subject being included in the professional examination in anatomy. The results of this approach to integration are being watched. Apart from obstetrical and specialist units, there are over 500 acute beds available for clinical study, which follows the lines customary elsewhere. The beds are distributed between three general teaching hospitals. Increasing attention is being given to research. Notable contributions have already been made by the departments of biochemistry, physiology, and anatomy. A gratifying addition to the resources of the department of anatomy has recently been made by the completion of two research laboratories, the cost of which was generously contributed by the Wellcome Trust.

At *University College, Galway*, the course for the degrees of M.B., B.Ch., B.A.O. covers six academic years. Courses in the premedical subjects are given in the college, and courses in the clinical subjects principally in the Regional Hospital, Galway. The latter is a new general hospital of about 500 beds, situated quite near the college. During the session just ended a new building for the hospital's departments of pathology and bacteriology has been completed and come into use, and the formal instruction of the medical students in pathology and bacteriology is now all carried out there. Clinical instruction is also given in the Western Chest Hospital, and in the Western Orthopaedic Hospital at Merlin Park, Galway. These are new hospitals with about 700 beds between them. Clinical instruction in psychiatry is given both in the Central Hospital, Galway, and in the Ballinasloe Mental Hospital. The summer term of the fourth medical year is spent in Dublin chiefly to enable students to reside in an obstetrical hospital for a period of two months. It is hoped that facilities for such residence will be provided in Galway in the near future. House appointments and registrarships are available for graduates in these hospitals.

### Royal Colleges and the Apothecaries Hall

The *Royal College of Surgeons in Ireland* admits to the pre-registration classes approximately 100 students each year. The normal method of entrance is by competition in the preliminary examination, but a limited number of places are given to those with exceptional qualifications and to certain students selected through the Colonial Office.

The *Royal College of Physicians of Ireland* is an examining body for the M.R.C.P.I. In addition it forms with the Royal College of Surgeons in Ireland the Irish Conjoint Board which grants licences in medicine, surgery, and midwifery (L.R.C.P. and S.I., and L.M.).

The licentiateship of the *Apothecaries Hall of Dublin* entitles to registration under the Medical Act, 1886. It enables the holder to practise pharmacy, as well as medicine, surgery, and midwifery, which means that he may, if he desires, open a medical hall. This, however, applies only to those who are qualifying to become doctors, not to pharmaceutical chemists. The Hall is an examining body only.

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## POSTGRADUATE EDUCATION

The universities and medical schools are responsible for most of the arrangements for postgraduate courses and other instruction facilities. Such courses will be found normally advertised in the medical press by the various organizations and authorities that provide them. Courses for general practitioners (ranking for Ministry grant) are arranged in London by the British Postgraduate Medical Federation (see below); in universities other than London by the deans of the faculties of medicine or directors of postgraduate studies, to whom application for further information should be made.

### BRITISH POSTGRADUATE MEDICAL FEDERATION

The British Postgraduate Medical Federation (University of London) provides postgraduate education in the medical and dental specialties, supplementing the opportunities available at the undergraduate schools and teaching hospitals, and those provided by the three Royal Colleges. All postgraduates, including those from the Commonwealth and Colonial territories, and from foreign countries, may obtain the advice of the staff of the central office of the Federation (18, Guilford Street, London, W.C.1) on programmes of study. In addition to the Postgraduate Medical School of London at Hammersmith Hospital, with its university departments of general medicine, general surgery, and pathology, there are fourteen postgraduate institutes comprising the Federation. The provisions for study made by these are detailed below.

#### The Federation and its Institutes

Each of the institutes of the Federation is associated with a special postgraduate teaching hospital or with one of the Royal Colleges. The number of students who can be admitted to the clinical practice of these hospitals is limited. Resident clinical appointments are available to suitable students of the institutes and provide the most suitable form of postgraduate education. Selected graduates have opportunity for research. At all the institutes instruction is given throughout the academic year; it is suitable for graduates in the early stages of their specialist education and also for those who have completed their practical training. Two or more years of hospital work in general medicine and general surgery after graduation are normally advisable before beginning work in the special branches. The work at the institutes is of an advanced type and is comprehensive enough to enable graduates with suitable practical experience to prepare for higher degrees and diplomas. Emphasis is placed on clinical and laboratory teaching, supplemented by lectures and demonstrations. Each institute has a reference library and takes the current journals of its specialty.

Most of the institutes run short courses for consultants, and many of them have one-day courses for registrars. Regular programmes of these courses are available for each academic year. Short courses and other forms of continuing education for general medical and dental practitioners and local authority medical officers are arranged at hospitals throughout the four metropolitan regions, with the assistance of the advisers in postgraduate medical and dental education.

Postgraduate students from abroad are advised to make their arrangements well in advance. Those who desire the assistance of the central office of the Federation should get in touch with the director, Professor Sir Francis Fraser, at the address given above, as far in advance of their arrival in this country as possible. Those sponsored by their universities, Governments, or other official bodies receive first consideration in the allotment of vacancies. Established specialists from overseas who are here for a short time, and who wish to see something of the practice of the country, are always welcome; they are regarded as visiting colleagues, and the experts in their specialties are always ready to receive them and let them see the work and teaching being carried on. An information bureau of postgraduate activities in London and other university centres is maintained at the central office.

The Federation awards annually to graduates working in medical and dental schools or teaching hospitals of the University of London a number of travelling fellowships for the purpose of travelling abroad.

Each year the Federation arranges a series of advanced lectures entitled "The Scientific Basis of Medicine." These are delivered at 5.30 p.m. on Tuesdays and Thursdays at

the London School of Hygiene and Tropical Medicine, during the autumn and winter terms.

### Postgraduate Medical School of London

The Postgraduate Medical School (Ducane Road, London, W.12) is associated with Hammersmith Hospital. The school is restricted to the medically qualified. It aims at the academic ideal of education rather than teaching, and is directed primarily to the training of teachers and specialists in general medicine, surgery, anaesthetics, pathology, and radiology. The work of the department of medicine is based on advanced clinical studies, supplemented by conferences, lectures, and discussions, with an emphasis on the scientific aspect of investigation and treatment. In the department of surgery the work is similarly arranged for the intimate clinical education of small groups in all aspects of surgery. The organized work of the clinical departments is concentrated into three university ten-week terms, starting in January, April, and October, leaving the vacations for more intensive research work. Research students are accepted for training and practice in methods of clinical investigation. The ordinary practice of the hospital is continuous throughout the year, but those not familiar with the school are advised not to start work in vacation-time. The clinical departments do not attempt to restrict the teaching to the needs of any particular examination curriculum, though it is of the proper standard for those working for higher degrees and diplomas. A year's comprehensive training in anaesthetics is provided. The work of the department of pathology includes a year's course for the university diploma in clinical pathology for which 16 students with pathology experience are selected. The hospital departments of radiology train doctors for the radiological diplomas. All these activities start in October. Many house officer and registrar posts are available in the appropriate departments.

### The Specialist Institutes

The *Institute of Basic Medical Sciences* (Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C.2) comprises departments of anatomy, physiology, and pathology of the Royal College. It co-operates with other specialist institutes of the Federation in providing facilities for practical work and instruction in basic medical sciences, and provides opportunities for research for selected graduates. Full-time or part-time courses of fourteen weeks' duration, suitable for candidates for higher degrees and diplomas, begin in January and September.

The *Institute of Cancer Research* (Royal Marsden Hospital, Fulham Road, London, S.W.3) comprises the Chester Beatty Research Institute and parts of the departments of physics and radiotherapy at the Royal Marsden Hospital. The institute is concerned with all aspects of research into the causation and treatment of cancer, with the training of research workers in this field, and with advanced teaching in biophysics, radiotherapy, and problems of atomic energy. There are laboratories for chemical, biochemical, and histological investigations into cancer and allied diseases. Facilities are afforded to those wishing to pursue research into the clinical and pathological aspects of cancer or the physical and biological foundations of medical radiology, and who may be working for higher degrees such as the Ph.D. The department of radiotherapy gives a lecture and demonstration course of one week's duration in May and November annually, primarily for doctors from overseas, and accepts candidates to train for the diploma in medical radiotherapy. A course of lectures for students studying for the M.Sc. degree in biophysics commences in October.

The *Institute of Cardiology* (35, Wimpole Street, London, W.1) is associated with the National Heart Hospital. Six appointments in senior registrar and registrar grades are available in the hospital and the institute to provide specialized training for postgraduates who have already a sound grounding in general medicine. Full-time and part-time courses of instruction of about eleven weeks' duration are held twice annually, starting in April and October, and two or three short intensive courses of lectures and demonstrations are held each year in February, June, and November; one of these is reserved for general practitioners.

The *Institute of Child Health* (The Hospital for Sick Children, Great Ormond Street, London, W.C.1) is associated with that hospital and with the Postgraduate Medical School at Hammersmith; the Queen Elizabeth Hospital for Children, Hackney, also participates in the clinical teaching. The Province of Natal Model Welfare Centre offers facilities for the study and care of the healthy child. The institute provides tuition throughout the year in three terms of three months each; in addition a series of lectures by specialists is given each term. Clinical clerkships are available for selected students.

The *Institute of Dental Surgery* (Eastman Dental Hospital, Gray's Inn Road, London, W.C.1) trains dental practitioners in the special branches of preventive and therapeutic dentistry. For candidates preparing for the F.D.S. of the Royal College of Surgeons, courses lasting eight months are held twice yearly, beginning in October and April.

The *Institute of Dermatology* (St. John's Hospital for Diseases of the Skin, 5, Lisle Street, London, W.C.2) gives clinical teaching daily throughout the year in the out-patient department, and instruction is given twice weekly at the in-patient department at Homerton. Tutorials in clinical dermatology and histopathology of the skin are given twice weekly during term time. There are also facilities for study and tuition in pathology, including mycology, and in radiotherapy and physiotherapy. Advanced students can apply for clinical and research assistantships, the former of which are competitive. In each of the university terms there is a series of lectures and a weekly clinical demonstration. Special short courses in histopathology and in medical mycology are also held. A discussion on cases of special interest, to which students attending the courses are invited, takes place once a week.

The *Institute of Diseases of the Chest* (Brompton Hospital, London, S.W.3) is associated with the Brompton and London Chest Hospitals. A comprehensive full-time course is conducted for a limited number of graduates who are specializing in chest disease, during the two terms beginning in October and January and a more selective one during the summer term. A larger number can be accepted for a part-time study, which is suitable for those reading for higher medical diplomas. Clinical instruction in thoracic surgery, including cardiac surgery, is given throughout the year, and there are courses in the October and January terms. Part-time instruction in radiology of the chest is given, and lectures and demonstrations open to the medical profession are held each week.

The *Institute of Laryngology and Otology* (330–332, Gray's Inn Road, London, W.C.1) is associated with the Royal National Throat, Nose and Ear Hospital. There is daily clinical teaching throughout the year. Whole-time courses held twice yearly include: basic sciences (three months), intensive lecture course (six weeks), practical revision course (two weeks), and advanced revision course (two weeks). Short courses on endoscopy, audiology, pathology, aural surgery, and malignant conditions are held occasionally.

The *Institute of Neurology* (National Hospital for Nervous Diseases, Queen Square, London, W.C.1) is associated with the National Hospital and the Maida Vale Hospital for Nervous Diseases. Teaching is mainly by attendance on hospital practice, supplemented by lectures and demonstrations. Two courses in clinical neurology are held annually, beginning in January and October. Clinical instruction in neurosurgery is given throughout the year. A course in the technique and clinical application of electroencephalography is held jointly with the Institute of Psychiatry twice a year. Courses of clinical demonstrations (two-weekly) are held several times a year. Advanced students are appointed as clinical clerks in the wards or attached to the special departments and research laboratories.

The *Institute of Obstetrics and Gynaecology* (Chelsea Hospital for Women, Dovehouse Street, London, S.W.3) is associated with Queen Charlotte's, the Chelsea Hospital,

and the department of obstetrics and gynaecology at Hammersmith Hospital. Teaching is based on ward work, supplemented by lectures and demonstrations during two terms of thirteen weeks' duration which begin in March and September. For students preparing for higher qualifications, two intensive courses of a fortnight's duration are held in June and December. A week's course for general practitioners is held twice a year.

The *Institute of Ophthalmology* (Judd Street, London, W.C.1) is associated with the Moorfields Eye Hospital. In addition to teaching by means of attendance on the hospital practice, a routine lecture and tutorial course, normally covering two terms of approximately sixteen weeks each, is held twice a year, commencing in March and October; the first part of the course is devoted to anatomy, embryology, histology, physiology, optics, and elementary clinical instruction; the second part comprises bacteriology, pathology, operative surgery, medical ophthalmology, and all aspects of ophthalmic disease. Introductory courses, lasting one week, in orthoptics and contact-lens practice are held during each term. Clinical teaching and lectures are given for advanced students, and there are facilities for research for suitably qualified candidates.

The *Institute of Orthopaedics* is associated with the Royal National Orthopaedic Hospital (234, Great Portland Street, London, W.1). Training in orthopaedics to selected graduates who have already been trained in general surgery and the basic sciences is afforded by means of clinical appointments, with opportunities for research. Short advanced courses for graduates with practical experience are held at various times during the year. Twice a year, in the spring and the autumn, a short revision course of a week's duration in advanced clinical orthopaedics is held. Both the central hospital in Great Portland Street and the country hospital at Stanmore are attended by postgraduate students.

The *Institute of Psychiatry* (Maudsley Hospital, Denmark Hill, London, S.E.5) is associated with the Bethlem Royal and Maudsley Hospitals. Training normally covers three years, after experience elsewhere in general medicine, and is based on responsible hospital duties under supervision. Regular series of lectures and demonstrations are given throughout each of the university terms. Clinical training continues throughout the year and includes seminars and case discussions. Students who, because of previous experience, do not wish to take the comprehensive course are able to attend a limited series of lectures and clinical instruction. For those who wish to specialize in child psychiatry a six-months course is held twice a year. A year's course in abnormal psychology for the university postgraduate diploma in psychology is available to holders of an honours degree in psychology. There are facilities for original investigation under supervision in the clinical and other departments.

The *Institute of Urology* (10, Henrietta Street, London, W.C.2) is associated with St. Peter's, St. Paul's, and St. Philip's Hospitals. Comprehensive instruction is given in the wards, out-patient departments, operating theatres, and laboratories throughout the year. Week-end courses of demonstrations and lectures are arranged for higher examination candidates. Occasional lectures on venereology are arranged with the Medical Society for the Study for Venereal Diseases, and arrangements can be made for graduates to attend venereal diseases clinics. In the winter months lecture-discussions on urological subjects of interest to the whole profession are held on Wednesday evenings at 5 o'clock. Limited numbers of clinical assistants are appointed to individual surgeons for personal tuition, and there are also research assistantships.

### Fellowship of Postgraduate Medicine

The Fellowship of Postgraduate Medicine (60, Portland Place, London, W.1) provides general information on postgraduate work available both in London and in provincial centres, and itself arranges a certain number of courses of instruction at hospitals in or near London. These courses are specially designed to be helpful to candidates for higher degrees and diplomas, though attendance at them is not restricted to such candidates. The courses include general medicine, general surgery, obstetrics and gynaecology, and children's diseases. Some are full-time, lasting for one or two weeks, but the majority are part-time and are intended particularly for postgraduates not free for full-time study.

The Fellowship also arranges week-end courses, occupying the whole of a Saturday and Sunday, in such subjects as general medicine, general surgery, orthopaedics, plastic surgery, rheumatic diseases, and infectious diseases. Although these are primarily intended for candidates for higher degrees, many of them are also suitable for, and attended by, general practitioners. The Fellowship is an independent body, and is not connected in any way with official arrangements for postgraduate instruction under the National Health Service.

## COLLEGES IN LONDON

### Royal College of Physicians

The Royal College of Physicians of London was founded in 1518 so that "none should be allowed to practise physic but those deeply studied therein," and the chief interest of the College is still the maintenance of a high standard of medical practice. The licence (L.R.C.P.) is granted after examination in association with the membership of the Royal College of Surgeons of England. Members (M.R.C.P.) are elected after passing a postgraduate examination. Fellows (F.R.C.P.) are elected annually from among the members, no examination being required. The College jointly with the Royal College of Surgeons conducts examinations for postgraduate diplomas in anaesthetics, child health, industrial health, laryngology and otology, medical radiodiagnosis, medical radiotherapy, ophthalmology, pathology, physical medicine, psychological medicine, public health, and tropical medicine and hygiene.

Each year about twenty lectures are held which are open to all members of the profession. This year, it has been decided to arrange conferences which, it is hoped, will be held from time to time on topics of scientific interest to consultant physicians. These conferences are designed especially for physicians in peripheral hospitals who wish to keep in touch with the latest developments. The first of these conferences on "Anaemia and the Alimentary Tract" was held in July (see *Journal*, August 2, p. 301); the second, on a subject to be announced, is to be held early next year.

The College has sponsored the foundation of the Association for the Study of Medical Education. The first conference of this body will be held at the College on September 25 and 26, when the subject for discussion will be "Experiment in Medical Education." The College also administers scholarships and grants for medical research. These are usually worth at least £1,000 per annum and are awarded for three years, and, although some of the scholarships are restricted, in all they cover a wide field of medical subjects. From time to time the College publishes reports on subjects of topical interest. This year a report has been published on electroencephalography.

### Royal College of Surgeons

The origin of the Royal College of Surgeons of England is to be found in the history of two corporations which flourished in the City of London six hundred years ago and more, the Barbers' Guild and Fellowship or Guild of Surgeons. After a long period of rivalry the two corporations composed their differences and were granted an Act of Union by King Henry VIII in 1540. Disharmony between the Barbers and Surgeons recurred and increased until in 1745 an Act of Parliament established two separate companies. In 1880 the Company of Surgeons was reconstituted by Royal Charter into the Royal College of Surgeons of London (the name was changed into its present form in 1843) and left the City to take up its present position in

Lincoln's Inn Fields, and from that date onwards the College has modified its constitution and increased its functions so as to enable it to keep pace with the times.

The principal examining body is the Court of Examiners, who examine both for the Fellowship (F.R.C.S.) and the membership (M.R.C.S.). The fellows number more than 4,000 and are to be found in every continent of the world. Since 1900 the honorary fellowship has been conferred on a limited number of distinguished persons, mostly surgeons in other countries. The membership is held by more than 25,000, and to grant this qualification the College combines with the Royal College of Physicians of London, the two colleges thus constituting by far the greatest licensing body in the country. They also grant conjointly various specialist postgraduate diplomas (see above). The College is also the chief licensing body in dentistry, now granting a fellowship in dental surgery and having granted the L.D.S. since 1859.

The College does not give undergraduate teaching, but since the war has devoted a great deal of attention to postgraduate instruction. The educational activities of the College are under the direction of the council of the College with the co-operation of : (*a*) the Institute of Basic Medical Sciences (Royal College of Surgeons of England and British Postgraduate Medical Federation), (*b*) and (*c*) its own Faculties of Dental Surgery and Anaesthetists, (*d*) the Joint Committee for Postgraduate Orthopaedic Training, (*e*) the Joint Committee for Plastic Surgery. For the purposes of research and teaching, there are seven scientific departments in the College. In addition to the courses of lectures, the educational work of the College is furthered by means of the Museum and Library, and in the Nuffield College of Surgical Sciences there is residential accommodation for 80 postgraduate students.

### Royal College of Obstetricians and Gynaecologists

Medical graduates who desire to specialize in obstetrics and gynaecology may apply for entry to the Membership examination of the Royal College of Obstetricians and Gynaecologists (M.R.C.O.G.). A minimum of three years' residence in hospital posts recognized for the examination is required before application is made, and after acceptance entry to the examination depends on the production of satisfactory records and commentaries on work done during the training period. The Fellowship (F.R.C.O.G.) is granted to Members who are judged by the Council to have advanced the science and practice of obstetrics and gynaecology, or who have attained such position in the profession of medicine or other spheres as to merit promotion.

A Diploma (D.Obst.R.C.O.G.) is awarded by examination to graduates with postgraduate hospital experience in general medicine or surgery and in obstetrics.

The advice of the College on postgraduate study and suitable hospital appointments is always available to doctors, both from this country and from overseas, who intend to specialize in obstetrics and gynaecology.

Copies of the regulations for examinations and all other particulars required may be obtained from the Secretary, Royal College of Obstetricians and Gynaecologists, 58, Queen Anne Street, London, W.1.

### College of General Practitioners

The College was founded in 1952 as an academic body, with broad educational aims, to be the headquarters of general practitioners in this country and in the Commonwealth, and to help and encourage them to maintain a high standard. It is organized for general practitioners, by general practitioners, to improve the efficiency and good name of the family doctor, and to raise his standing in the eyes of the medical profession, of students, and of the public. By June, 1958, it already had 4,723 members and associates. Its aims are to supplement the work of the universities, of the three Royal Colleges, and of other educational institutions, and not to compete with them; its work is complementary to the scientific and educational functions of the British Medical Association.

The 36 regional faculties of the College (14 of them overseas) arrange courses, symposia, week-end courses, lecture-demonstrations, etc., for general practitioners in their districts. They encourage schemes of student-attachment to family doctors, and lectures by general practitioners. The college *Teaching Register* shows the names of more than 1,300 family doctors in the British Isles who are willing to take students into their practices. Encouragement and promotion of the continuing education of general practitioners is one of the most important aspects of the College's work. The equipment and premises of family doctors are being carefully studied. A *Research Register* shows more than 600 general practitioners interested in research. Twenty issues of a *College Journal and Research Newsletter* have been published. A records unit is being developed.

The college works closely with the British Medical Students' Association, the British Postgraduate Medical Federation, and the Edinburgh Postgraduate Board of Medicine. It has been given Public Welfare Foundation prizes for medical students interested in general practice, fifteen annual Upjohn travelling fellowships of £200 each, an annual James Mackenzie lecture, the Butterworth gold medal, and the Pfizer postgraduate grant. It has been invited to judge the entries for the Benger prizes for original observations in general practice. A generous donor has offered to present this new college with a fine building of its own. Medical students may join the college as associates as soon as they qualify. Detailed information may be obtained from the secretary, College of General Practitioners, 41, Cadogan Gardens, London, S.W.

## UNIVERSITIES IN ENGLAND AND WALES

### Postgraduate Facilities at Oxford

The university committee responsible for postgraduate medical studies at Oxford has recently been reconstituted and its duties have been made the subject of a new university statute. The first duties of this committee will be to meet the obligations imposed upon the university by Act of Parliament—namely, keeping general practitioners informed of the latest developments in professional knowledge, and approving hospitals and posts therein for pre-registration purposes.

Facilities for postgraduate medical studies are available in the Nuffield professorial departments of the university under the professors of medicine, surgery, obstetrics and gynaecology, anaesthetics, and orthopaedic surgery. Certain clinical appointments on the staff of these departments are open to specialist trainees from the Commonwealth. In addition to the provision made in the above departments for the training of specialists there are approximately twenty trainee appointments in the teaching hospitals (the United Oxford Hospitals) and eleven in certain departments of selected non-teaching hospitals of the Oxford region. These appointments (senior registrars) are in the following branches of medicine: general medicine, paediatrics, psychological medicine, chest diseases, pathology, general surgery, orthopaedics, and accident services, otolaryngology, ophthalmology, obstetrics and gynaecology, neurosurgery, plastic surgery, dental surgery, and radiology. Six of these are "paired" posts, the holders of which spend part of their period of training in a teaching hospital and part in a non-teaching hospital by mutual agreement.

Facilities for the continuing education of general practitioners are provided in hospitals at Oxford, Reading, Aylesbury, Stoke Mandeville, and Northampton. Most departments of the United Oxford Hospitals may be visited by general practitioners on certain days throughout the year. Practitioners can follow either an intensive course of a week's or fortnight's duration (when programmes are arranged to suit individual requirements) or an extended course spread over a number of weeks or months. In addition, special short courses are arranged for general practitioners during the year.

All inquiries should be made of the Director of Postgraduate Medical Studies, Osler House, 43, Woodstock Road, Oxford, from whom further details of long and short courses may be obtained.

### Postgraduate Facilities at Cambridge

The School of Postgraduate Teaching and Clinical Research includes the departments of experimental medicine, human ecology, medicine, and radiotherapeutics. In the John Bonnett Clinical Laboratories pathological and biochemical services of the United Cambridge Hospitals are provided by university teaching officers under the direction of the professors of pathology and biochemistry. Particulars of the research activities of the school are given in the departmental annual reports, which are published in the Cambridge University *Reporter* in February each year.

Professor J. S. Mitchell took up office as regius professor of physic in July, 1957, and among the proposals submitted to the University in association with his appointment were plans for the development of the facilities of the Postgraduate Medical School and the United Cambridge Hospitals, in collaboration with the East Anglian Regional Hospital Board. An important step in this direction was taken with the appointment of Dr. Leslie Cole as Dean of the Postgraduate Medical School in December, 1957. The attention of the Council of the Senate and the hospital authorities has been drawn to the urgent need for the provision on a site close to the Radiotherapeutic Centre of Addenbrooke's Hospital of a building to house an Institute of Postgraduate Medical Studies, with lecture-rooms, laboratories, and study rooms, and to provide more permanent accommodation for the departments of medicine and radiotherapeutics, both of which are at present in temporary buildings.

Between October and July in each academical year special sessions are devoted to teaching by members of the consultant staff of the United Cambridge Hospitals. Other teaching activities include clinical or clinico-pathological meetings held on the second Friday of each month during term, which give an opportunity for general practitioners and others to meet the staffs of the teaching hospital and of the various departments of the medical school. One-day symposia on subjects of particular interest to general practitioners are held monthly on Saturdays throughout the academic year. These symposia usually take the form of lecture-discussions followed by case-demonstrations. To meet the needs of practitioners who are unable to leave their practices on Saturdays it is proposed to hold one or two Sunday meetings during the coming year. A one-week refresher course for general practitioners will be held from July 6 to 11, 1959. Accommodation and board for those attending the course will be provided in Downing College.

Residential courses in midwifery are available for undergraduate and postgraduate students at the Maternity Hospital. All postgraduate courses and symposia are open without fee, subject to the terms of the Ministry of Health scheme, to practitioners who are under contract with an executive council of the National Health Service, and who have not fewer than 500 (or in the case of a rural practice 250) persons on their N.H.S. lists. Practitioners who do not qualify for a grant under the Ministry of Health scheme may be charged fees at rates corresponding with those which otherwise would have been payable by the Ministry.

A course on "Progress in the Biological Sciences in Relation to Dermatology" has been arranged from September 22 to 27, 1958. The course will consist of a number of half-day sessions each devoted to a group of papers on the same or related subjects, including: "the melanocyte and melanogenesis," "cutaneous innervation," "the histochemical investigation of the skin," "bacteriology," "psychophysiological mechanisms," "comparative medicine," "immunology," "inflammation," "carcinogenesis," "radiation of the skin," and "pharmacology." The course is designed primarily for those engaged in the clinical practice of dermatology, but is open to any medically qualified person interested in the subjects under discussion. Courses are also contemplated on "anaesthesia," "diabetes," "psychiatry," "metabolic aspects of disease," and "dental surgery." Further details of postgraduate facilities may be obtained from the Secretary of the Medical School, Tennis Court Road, Cambridge.

### Postgraduate Facilities at Other Universities

The board of graduate studies of *Birmingham University* provides a large number of extended and short intensive courses of instruction to help general medical practitioners to keep abreast of recent advances. Most of these are held at hospitals in Birmingham, but some are arranged at other centres such as Coventry. They endeavour to cover the needs of doctors and dentists practising in the West Midlands but practitioners from further afield, particularly Birmingham graduates, are welcomed if they care to attend. General medicine, general surgery, paediatrics, obstetrics, neurology, neurosurgery, psychiatry, dental prosthetics, and general dental surgery are the main subjects covered. In arranging these facilities the board works in close co-operation with the Midland Faculty of the College of General Practitioners. The Institute of Accident Surgery, which is affiliated to the board, holds short intensive courses in traumatic surgery at the Birmingham Accident Hospital. Some are planned to help surgical consultants and trainees, some are for industrial medical officers and nurses, and others are for general practitioners. Each year a five-day course in industrial ophthalmology is held at the Birmingham and Midland Eye Hospital. Birmingham University does not grant any medical diplomas and its doctorates of medicine and philosophy and its mastership of surgery are given only for theses providing a substantial advance in knowledge. Graduates of universities other than Birmingham must have pursued original work in the Birmingham Medical School or in its teaching or affiliated hospitals for a minimum period of two years before submitting such theses. The only courses of instruction for higher diplomas are for the diploma in psychological medicine of the Conjoint Board and the M.R.C.P. Facilities for Parts I and II of the D.M.R.D. and D.M.R.T. are, however, available to those holding trainee appointments in the teaching hospital. Attachments as observers and research workers in the medical school and teaching hospital are arranged for large numbers of postgraduate students from other centres in England and from abroad, but no financial support can be offered and the expenses have to be met by outside sponsoring bodies or by the student himself. The board, in conjunction with the university department of social medicine, pursues a number of research projects in which the help of general practitioners is invoked. The chairman of the board is Dr. A. G. W. Whitfield, The Medical School, Birmingham, 15.

At *Durham University* the part-time course for the diploma in public health ended in June. Seven of the eight candidates were successful in the examination and obtained their diplomas. The next course will begin in January and extend over five academic terms. Refresher courses for general practitioners were held during the year. These consisted of intensive week-end courses in medicine, paediatrics, psychiatry, and obstetrics, and extended courses consisting of several afternoon sessions in various subjects. A number of local practitioners attended two-weeks resident courses in obstetrics in the Princess Mary Maternity Hospital. Postgraduate instruction in anatomy, physiology, pathology and bacteriology, and other subjects is always available by arrangement with the professors of the departments concerned. Several postgraduate students from overseas have been provided with suitable courses and research facilities leading to higher degrees.

Postgraduate courses at *Liverpool University* have continued as in previous years. Out of a total of 716 students in the medical school, 205 are postgraduate, 16 attended the

course in general surgery, 19 in orthopaedic surgery, 15 in public health, 11 in anaesthesia, 12 in psychological medicine, 25 in radiodiagnosis, 7 in radiotherapy, 4 in venereology, 67 in tropical medicine and hygiene, and 22 in the part-time M.R.C.P. course recently established. The course in general surgery is suitable for candidates who have already passed the primary examination for the F.R.C.S., but candidates for the course in orthopaedic surgery must already hold the F.R.C.S., to become eligible to take the examination for the M.Ch.Orth. degree. The courses leading to the D.M.R.D. and D.M.R.T. extend over two years; candidates are usually found registrar appointments during their second year. During the course in anaesthesia students are found appointments in recognized general hospitals for the purpose of gaining practical experience. Further information regarding university postgraduate courses may be obtained from the dean of the faculty of medicine.

At *Manchester University* courses for the diplomas in psychological medicine, public health, radiodiagnosis and radiotherapy have been held. The course for the diploma in bacteriology, however, will not be held in the coming session. A one-year course in medical statistics is also available. Refresher courses in industrial health have been held, and a series of lecture-demonstrations for general practitioners, which were held on alternate Sunday mornings, were very successful. These were given in conjunction with the College of General Practitioners, and a similar series will be given this autumn. The dean of postgraduate medical studies is Mr. R. L. Newell, who is available for consultation by appointment.

At the *University of Bristol* the degrees of M.D., Ch.M., and Ph.D. are open to graduates of other universities, but only to those graduates who have pursued original research in the university for not less than two years, and in effect this regulation means that these higher degrees are open only to those graduates of other universities who hold appointments on the staff of Bristol University or one of the local hospitals. The university diploma in psychological medicine is in abeyance. The university offers a diploma in public health, and a course for it will be held this session. A few postgraduate students are accepted for training for the D.M.R.D. and D.M.R.T. (Conjoint), and arrangements can sometimes be made for suitable candidates to hold a part-time post in the Bristol hospitals while doing the course. A course in child health lasting three months usually begins in October of each year, but this year is not being held. Refresher courses for general practitioners consist of Sunday morning lecture-demonstrations in Bristol and occasional intensive week-end courses at hospitals in various parts of the South-Western region. A postgraduate course in medical physics for science students has been instituted. A review of pre-registration appointments has been undertaken to ensure that only house officer posts which have the facilities necessary for sound postgraduate training are recognized for the purpose. A medical postgraduate dean has been appointed.

At the *University of Leeds* extended refresher courses for general practitioners, comprising one half-day session a week for six weeks and week-end refresher courses on special topics, are arranged from time to time, both in the teaching hospitals and in regional hospitals. The university grants a diploma in public health, also a diploma in psychological medicine, the part-time course for which covers eight academic terms. The secretary of the Postgraduate Committee is Dr. T. A. Divine, School of Medicine, Thoresby Place, Leeds, 2.

At *Sheffield University* the recently resuscitated D.P.H. course was successfully concluded last session, but for various reasons it is not proposed immediately to commence another. The development of the department of psychiatry, to which reference has already been made, has enabled the department to become increasingly a focus for regional postgraduate education in this specialty. Other postgraduate activities continue along the lines previously described, though the experiment is being tried, at the time of writing, of holding the usual intensive refresher course for general practitioners in the hospitals of the Nottingham area instead of in Sheffield as in past years.

At the *Welsh National School of Medicine* one of the postgraduate diplomas which attracts many students from overseas—namely, the tuberculous diseases diploma—will in future include chest diseases generally, its title being changed to the diploma in tuberculosis and chest diseases (D.T.C.D.). This is the first step in developments which are contemplated in the department of tuberculosis.

## SCOTTISH UNIVERSITIES

### Postgraduate Facilities at Edinburgh

Edinburgh University holds postgraduate courses leading to the diplomas in medical radiodiagnosis (2 years), medical radiotherapy (2 years), psychiatry (6 months, full-time), public health (9 months), and tropical medicine and hygiene (6 months, see below). Graduate scholarships and fellowships are also offered, being open to graduates in the faculty of medicine of any university, to graduates in the faculties of arts or science of any university who hold an honours degree, and to licentiates in medicine. The holders of such awards are required to undertake research work in a department within the faculty of medicine. In addition, the Edinburgh Postgraduate Board for Medicine, which is an advisory council to the university, provides courses of instruction leading to the higher qualifications granted by the Royal Colleges of Edinburgh. These are advertised at intervals in the medical press, and full particulars can be obtained from the director of postgraduate studies, Surgeons Hall, Edinburgh, 8. In addition the board arranges library facilities and clinical work and helps the postgraduate students in a variety of ways. The courses of instruction are considered to be of value to those requiring a period of revision or those preparing for higher diplomas.

In the medical sciences a 12-weeks course begins at the end of June. This includes lectures and practical instruction in anatomy, physiology, pathology, biochemistry, and bacteriology. The instruction is of an advanced standard and students should already be well grounded in these subjects. In addition two 10-weeks courses are arranged to start in October and February. In surgery there are two 12-weeks courses each year, beginning in March and September. The numbers are limited and the instruction is primarily clinical in nature. In medicine there are two similar 12-weeks courses. The instruction is systematic, clinical, and by demonstrations. From July to September a course in clinical medicine is arranged in which clinical instruction in small groups is given in the teaching medical units in Edinburgh. For those already holding higher qualifications short intensive courses in special subjects are held from time to time. Advanced courses in endocrinology and gastro-enterology are being arranged to take place in March, 1959. The numbers on these courses are limited so that discussion can be free. Through the director of postgraduate studies, postgraduate students may be attached for clinical duties to the medical and surgical units in Edinburgh, preference being given to those who have attended the courses.

A two-weeks refresher course for general practitioners is held at Edinburgh in May, giving a wide variety of instruction in medicine, surgery, and obstetrics. There are also occasional one-day courses in selected subjects, and a series of clinical meetings arranged for the general practitioners of the South-East Region of Scotland. In addition, there are occasional courses specially arranged for anaesthetists.

The Royal College of Surgeons of Edinburgh (18, Nicolson Street) has a two-part examination for its fellowship.

### Postgraduate Facilities at Glasgow

Glasgow University Postgraduate Medical Education Committee, representing the University and the Royal Faculty of Physicians and Surgeons of Glasgow, is offering

the following courses during the coming session. A nine-weeks' part-time course of instruction in anatomy, physiology, biochemistry, pathology, and bacteriology will be held, as in previous years, from October to December. The course is suitable for candidates preparing for the primary examinations for the surgical fellowships, and will provide a total of approximately 180 hours of instruction. The course is organized primarily for the junior staff of hospitals in the Western Region of Scotland, but it is also open to other applicants. A modified form of the course is available for trainees in anaesthetics reading for the primary examination of the F.F.A. Clinical attachments to teaching units of one to three months' duration can be arranged in general medicine, general surgery, and various specialties for those proceeding to higher qualifications.

An annual course for the diploma in public health is available, and a course for the diploma in industrial health will be arranged in any year in which there are sufficient applicants. Short courses in other specialties are arranged when the demand arises and are advertised in the medical journals. For the ensuing session a three-weeks course in mental deficiency and two week-end courses in chemotherapy have already been arranged. The department of psychological medicine will hold a part-time course, extending from January to June, 1959, for candidates reading for the D.P.M. Training in radiodiagnosis and radiotherapy, recognized for the D.M.R.(D.) and D.M.R.(T.) is available. At least two refresher courses for general practitioners are held each year. A very successful addition to the range of postgraduate courses has been the institution of short intensive courses on the use of radioactive isotopes. These courses are organized by the staff of the Regional Physics Department, which advises and assists hospitals on matters concerned with isotopes and electronic apparatus.

The Royal Faculty of Physicians and Surgeons of Glasgow grants, after examination, a fellowship *qua* physician and a fellowship *qua* surgeon. The examinations are clinical, written, and oral.

### Universities of St. Andrews and Aberdeen

At *St. Andrews University* a combined clinical and medical sciences course will be held from October to March at Queen's College, Dundee. All who take this course will have a clinical attachment in one of the 16 specialist subjects of their choice and a supervisor. The object of the course is to bring postgraduate students up to date with current trends in the medical sciences which are of importance to future medical developments. In addition there are weekly open postgraduate lectures by distinguished visitors and a course of lectures on scientific methods. There is also a postgraduate course in anatomy and physiology (including biochemistry) at St. Salvator's College, also lasting from October to March. Details of these courses may be obtained from the dean of the medical faculty.

At *Aberdeen University* there are courses for general practitioners. Once a year there is a full-time course of a fortnight's instruction, and part-time courses in the various specialties are held once a week during each term. Apart from the instruction given to registrars in preparing them for examinations for higher qualifications, there are no organized courses for such people, but anyone who is interested may be taken on to do postgraduate study in the various departments.

## HYGIENE AND TROPICAL MEDICINE

### The London School

The London School of Hygiene and Tropical Medicine (Keppel Street, Gower Street, W.C.1) is a postgraduate school of the University of London, devoting its attention to teaching and research in preventive medicine and occupational health, bacteriology, and the whole range of subjects concerned with tropical medicine and hygiene. The work of the school is organized in ten main departments: applied physiology, bacteriology and immunology, biochemistry, clinical tropical medicine, entomology, human nutrition, medical statistics and epidemiology, parasitology, public health, and the Ross Institute of Tropical Hygiene.

The research work has many links with other institutions at home and abroad. On the teaching side the school prepares students for four academic postgraduate diplomas of London University: applied parasitology and entomology, bacteriology, public health, and tropical medicine and hygiene. These courses occupy a whole academic year. The school also provides a five-months course for the Conjoint Board's D.T.M.&H. Teaching for the University of London postgraduate D.P.H. is designed to develop the student's knowledge of principles of preventive medicine and to bring him in touch with practical issues of public health administration. Much of the work is in the form of practical instruction against the background of the British health services, and arrangements are made for the students to visit health areas in both urban and rural districts and to study central administration. The study of British health services is intended to illustrate the broad principles of public health in such a way as to render the course appropriate to students from both home and overseas. In addition to the subjects covered by the D.P.H. syllabus the students may take one of the following special subjects: child health, medical statistics and epidemiology, mental health, occupational health, tropical hygiene, and nutrition. The special subject of occupational health, together with the general teaching for the D.P.H., fulfil in part the requirements for entry to the examination for the D.I.H.

The course for the University of London postgraduate diploma in bacteriology provides advanced instruction for graduates in medicine, science, and pharmacy, and for others with suitable qualifications, who intend to follow a career in bacteriology. The course begins in October and lasts for nine months. The course for the Conjoint Board's D.T.M.&H. is of five months' duration and is held twice a year. The course for the University of London academic postgraduate D.T.M.&H. occupies an academic year. There is a preliminary course of approximately four and a half months for the Certificate in Tropical Medicine and Hygiene commencing at about the beginning of October each year. The final part of not less than four months consists of advanced study in one of the following two fields—clinical tropical medicine and tropical hygiene.

The course for the University of London postgraduate certificate and diploma in applied parasitology and entomology, planned mainly for those wishing to take up research or laboratory appointments abroad, is held annually commencing in October. Graduates in medicine, veterinary medicine, veterinary science, and science, and those with approved non-graduate qualifications in medicine and veterinary medicine, are eligible. The full course lasts for nine months.

A course in statistical methods applied to medicine and epidemiology is held annually on two days a week from approximately the beginning of March to the end of June. Students without a medical qualification can be accepted. A ten-weeks course in environmental control is held twice a year, commencing at approximately the beginning of March and October. Although intended primarily for health inspectors from abroad, the course is so planned as to be of value to medical officers and others interested in the health aspects of environmental control both at home and abroad.

### Royal Institute of Public Health and Hygiene

The Royal Institute of Public Health and Hygiene (28, Portland Place, London, W.1) conducts recognized courses of instruction for the diploma in public health and for the diploma in industrial health. The next courses will start on September 12. All tuition may be taken as whole time or part-time study. Part-time study may be commenced at any time. Clinical tuition in general medicine at a postgraduate medical teaching hospital is available and may be undertaken optionally. The examinations are those of the Conjoint Board of the Royal College of Physicians of

London and the Royal College of Surgeons of England for both diplomas, and, in addition, of the Society of Apothecaries of London for the D.I.H.

### Liverpool School of Tropical Medicine

Men and women students of any nationality who hold a medical qualification approved by the university are admitted at the Liverpool School of Tropical Medicine (Pembroke Place, Liverpool) to examination for the D.T.M.&H. (Liverpool). A complete course of instruction lasting about three months is given twice yearly. The examination is held in December and April, and consists of two papers on tropical medicine (including pathology and bacteriology), one on parasitology, one on entomology, two on tropical hygiene and related subjects; and practical and oral examinations in tropical medicine, parasitology and entomology, and tropical hygiene. The dates of the courses are September to December and January to April. The school also gives courses in parasitology and entomology for students taking the D.P.H.

### Tropical Medicine at Edinburgh

There is no separate school of tropical medicine at Edinburgh University, although there is a department in that subject. Other departments also contribute to the courses of instruction leading to the diploma in tropical medicine and hygiene. The primary course is held in the autumn and the secondary course in the spring. The former comprises systematic instruction and practical work in the diseases of tropical climates, entomology, parasitology, bacteriology, and vector control. The secondary course provides further instruction in diseases of tropical climates and also in tropical hygiene, virology, applied physiology, venereal diseases, tuberculosis, and elementary statistics. Clinical instruction is given in the wards of the Eastern General Hospital and the other classes are held in the appropriate university departments. Examinations are held at the end of the primary and secondary courses. Candidates who have passed the examination at the end of the first term may interrupt their course and take the secondary course at a later date.

## OTHER COURSES AND EXAMINATIONS

The *Tavistock Clinic* (2–4, Beaumont Street, London, W.1) is an out-patient clinic for psychotherapy of neurotic and personality disorders, both of adults and of children. Registrar and senior registrar appointments, in both the adult department and the department for children and parents, provide systematic training in these fields. Personal analysis is available to such trainees in the adult department. There are also the following extramural courses: (1) a two-year part-time introductory course in psychotherapy, including psychopathology and group experience, open to selected trainees from other National Health Service institutions; (2) seminars at introductory and more advanced levels for general practitioners and consultants in principles of psychological medicine and the doctor–patient relationship, including case supervision for those who want experience in treating neurotic and psychosomatic disorders in their own practices. There are also courses in Rorschach testing (open to psychiatrists), and for clinical psychologists, social workers, and child psychotherapists (non-medical). The clinic welcomes visitors, and has some facilities for offering associate status to interested overseas psychiatrists, psychologists, and social workers who are in Great Britain for further training. Full particulars may be obtained from the training secretary at the above address.

The *National Association for Mental Health* (39, Queen Anne Street, London, W.1) organizes, with the extramural department of the University of London, courses on educationally subnormal children and mental defectives for school medical officers. The course includes lectures on normal child development, the pathology and causation of intellectual retardation and maladjustment, the psychology of educationally subnormal children, and educational and social implications of backwardness. A year's course is organized for men and women wishing to train for work in occupation centres and "school departments" of mental deficiency hospitals. Lectures and courses for social workers, health visitors, and teachers are also held.

The *Institute of Psycho-Analysis* (63, New Cavendish Street, London, W.1) furnishes a part-time course lasting about four years in psycho-analytic theory and technique. It includes personal analysis, attendance at lectures and seminars, and clinical work under supervision. General psychiatric experience must be obtained at other clinics or hospitals, since the teaching at the institute is confined to psycho-analysis.

The *Society of Analytical Psychology* (25, Park Crescent, London, W.1), founded in 1945, is the professional body representing Jungian psychology in this country, and is a training centre for analytical psychology with C. G. Jung as its President. For some years the society has operated a part-time course of training in analysis. This consists of two parts. Candidates accepted for Part I undergo a personal training analysis for at least two years. Later, if accepted for Part II, candidates attend a two-year course of seminars on clinical practice, the theoretical aspects of analysis, and an introduction to mythological material in relation to medical psychology. In addition each candidate begins to treat cases under the supervision of a training analyst. Election to associated professional membership takes place when the candidates have fulfilled certain minimum requirements with regard to the length of their personal analysis and supervision period, and when they are considered competent to treat cases without supervision. For its own members the society gives the opportunity of participation in lectures, seminars, and research groups concerned with problems of adult and child analysis.

A course of instruction in homoeopathy for medical practitioners and senior students, arranged by the *Faculty of Homoeopathy*, begins at the Royal London Homoeopathic Hospital (Great Ormond Street, W.C.1) on October 9. It includes lectures on homoeopathic prescribing and on homoeopathy in theory and practice, also clinical tutorials for practical instruction in homoeopathic practice. The lectures deal with subjects required for examination for the Diploma of Membership of the Faculty.

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## CAREERS IN RESEARCH AND THE SERVICES

### Medical Research Council

The Medical Research Council (38, Old Queen Street, London, S.W.1), originally established in 1913 as the Medical Research Committee, is appointed to administer the funds provided annually by Parliament for the promotion of research in medical science. The Council is under the general direction of the Committee of Privy Council for Medical Research, of which the Lord President is the chairman and the Minister responsible to Parliament. The Council is not constitutionally a Government department; it selects and appoints its own staff, who are not civil servants. The scientific staff of the Council work in some 70 establishments located mainly in hospitals and universities in Great Britain. The Council also maintains laboratories in Gambia, Jamaica, and Uganda. The total scientific staff of the Council numbers nearly 700, of whom about one-half are medically qualified. Its research establishments vary widely in size; the largest is the National Institute at Mill Hill, but the average research unit consists of from five to ten scientific workers with a number of technical and clerical assistants. Arrangements have been made by the Council, in consultation with the Health Departments and with the advice of the Clinical Research Board, for the development of research in the clinical field.

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The aim of the Council is to provide the opportunity for careers which are equivalent to those offered in the universities to men and women of equal ability and experience; the Council's salary scales for scientific appointments are based on this principle. New appointments to the scientific staff, except in the case of senior posts, are normally made for definite periods, usually of three or five years at a time.

In addition to maintaining its own staff, the Council makes available short-term grants in support of specific research projects carried out by independent workers in universities, hospitals, and elsewhere. The Council also awards clinical research fellowships, scholarships for training in research methods, and certain travelling fellowships; these last are awarded either on an agency basis for other bodies or from private benefactions entrusted to the Council.

Pamphlets dealing with the constitution and functions of the Council, and describing opportunities for service on its staff, are obtainable from the Council's headquarters office.

### Public Health Laboratory Service

On behalf of the Ministry of Health the Medical Research Council administers the Public Health Laboratory Service, which was originally set up as an emergency service in 1939 and has since become permanent; there are about 60 separate laboratories in England and Wales.

In addition to their more routine duties, members of the staff of the service, whose salary scales are normally equated with those of the National Health Service, undertake research problems in bacteriology and epidemiology. Furthermore, the service maintains a number of special laboratories which act as reference centres for particular infections, and these engage largely in research.

### Naval Medical Service

"Naval medicine" comprises a variety of subjects including the physiology of diving, the physical aspects of service afloat and ashore, commando service, tropical diseases, and industrial hygiene; an important further specialty is that of aviation medicine, and a small number of naval medical officers undergo full pilot training before undertaking duties with the Fleet Air Arm or in research establishments. The naval medical officer is not concerned solely with the welfare of the sailor, but also with the families of Service men and of Admiralty personnel serving abroad. Officers on the permanent list are encouraged to specialize in all branches of medicine and are given full facilities to obtain higher qualifications. Courses of postgraduate study are carried out both in naval hospitals and at civilian teaching centres.

Service on the active list is up to the age of 55 for all officers, 57 for surgeon captains, and 60 for surgeon rear-admirals. Previous experience, both Service and professional, is counted in assessing seniority—previous commissioned service as a medical officer in one of the armed Forces counts in full, and non-medical commissioned service counts as to half. Civilian hospital experience and also some medical experience in private practice may be allowed to count up to a limit of seven years in all. Officers serving in the United Kingdom are granted 42 days' leave per annum on full pay and allowances, with three free travel warrants. If serving overseas local leave is given at the rate of 14 days a year, and foreign service leave at the rate of two days for each month is allowed on returning to the United Kingdom. Leave for officers serving in H.M. ships on general service is at the rate of three days for each month.

All entries at present are being made as short commissions in the first instance. Short service consists of either three or four years, during which period a medical officer becomes a surgeon lieutenant R.N., and is eligible to apply for transfers with full seniority to the permanent list. Officers who transfer to the permanent list after a minimum of one year's service will be paid a grant of £1,500 (taxable). The normal career of a medical officer enables him to be promoted to the full rank of surgeon lieutenant after one year's service and to surgeon lieutenant-commander after a further seven years' service. In the normal course surgeon lieutenant-commanders are promoted to surgeon commanders by selection at about their fifteenth year of total service, and surgeon commanders to surgeon captains at about their twenty-third year of total service.

Further information may be obtained from the Medical Department, Admiralty, Queen Anne's Mansions, St. James's Park, London, S.W.1.

### A Career in the R.A.M.C.

Two-thirds of medical officers in the Royal Army Medical Corps are employed on general-practitioner duties. After attending the junior officers' course at the Royal Army Medical College, Millbank, they start their career as regimental medical officers and they become conversant with the soldier and his environment, the objects of the Army, and the requirements from its medical service in peace and war. They will later serve overseas, where, as regimental medical officers or in charge of a medical reception station or small hospital, they will be able to study the causation, prevention, and treatment of tropical diseases, the effects of climate, and the like. On return to the United Kingdom they attend the senior officers' course, the first two and a half months being spent in study at Royal Army Medical College, Millbank, and the next three months undergoing a special postgraduate course at selected teaching hospitals. At this stage officers may opt to remain at general medical duties or take up field training or junior staff appointments. For the more senior appointments the requirements are a sound background of clinical and preventive medicine to meet their advanced responsibilities in the administration of the Army Medical Service in peace and war.

Specialists are, subject to professional proficiency, employed on specialist duties up to the rank of colonel. Thereafter they may serve in this rank up to the retiring age of 57 or may be selected for promotion to brigadier in either a specialist or non-specialist capacity. The process of selection for specialist training is carried out after the junior officers' course, those applicants who are most successful in the course examination being accepted. Those accepted are provided with excellent opportunities to obtain higher qualifications and specialist experience. At present ophthalmologists, otolaryngologists, and radiologists are especially required. There are liberal arrangements for specialists and non-specialists to undergo postgraduate training throughout their career.

All suitable medical officers, specialist or non-specialist, may be employed up to the age of 65 in appointments specially set aside for retired officers. Non-specialists are employed on general-practitioner or medical administrative duties and specialists on specialist duties.

Further information may be obtained from the Assistant Director General, War Office, A.M.D.2, London, S.W.1.

### Medical Branch of the R.A.F.

The Royal Air Force offers an attractive career to both men and women medical practitioners who are British subjects or citizens of the Irish Republic. The normal upper age limit for applicants is 33, but older applicants may be considered. Appointment in the first instance is normally to short-service commissions for three, four, five, or six years, each of which may be extended to complete a maximum period of eight years. Exceptionally, suitable candidates may be appointed to permanent commissions direct from civil life. Short-service officers may apply for permanent commissions at any time during their service. Medical practice in the R.A.F. brings officers into contact with flying, and air evacuation of the sick and wounded as well as with the clinical specialties and the treatment of Service families. In addition, there are opportunities in aviation medicine, physiology, hygiene, and industrial health.

Officers serving on permanent commissions may be allowed study leave to take approved postgraduate courses, for which tuition fees on an approved scale may be granted. Officers having experience or aptitude in a specialty may be employed on specialist duties, if Service conditions permit, with the object of qualifying as junior specialists and subsequently earning recognition as R.A.F. specialists. A full career is possible in the clinical specialties with time promotion to group captain and additional specialist pay. Non-specialist medical officers below the rank of group captain may be awarded additional pay on gaining a registrable D.P.H., D.I.H., or D.T.M.&H., provided the prescribed period of study occupied an academic year. Non-specialist medical officers can expect time promotion to wing commander, with promotion to higher ranks by selection. Antedate of seniority up to a maximum of seven years may be admissible for civil experience and will count towards pay, seniority, and promotion.

Further information can be obtained from the Under Secretary of State for Air, Air Ministry, M.A.1, 1–6, Tavistock Square, London, W.C.1.

### Prison Medical Service

The Prison Medical Service is a part of the general service class of the medical civil service, and is under the immediate control of the director of medical services at the Prison Commission. The work is mainly clinical and the medical officer is responsible for the physical and mental welfare of the inmates, a responsibility which extends to a general oversight of the hygiene of the establishment in which he is working. The service is expanding to meet the needs of a rising inmate population and the increased demands of present-day methods. It offers an attractive career to medical practitioners who are interested in the various problems connected with crime and the understanding and treatment of criminals. The medical and surgical cases seen are comparable with those met with in outside practice. The various establishments have their own hospital accommodation; a large prison, for example, may well have a hospital with up to 100 beds.

The doctor in a prison or borstal is a member of a team whose efforts are directed towards the rehabilitation of those committed to its charge. On the medical side the aim is not only to attend to ordinary day-to-day medical care but to discover, and if possible to remedy, disabilities and maladjustments which hinder the training of the offender and make it more difficult for him to regain a place among law-abiding citizens. Although not himself in the National Health Service the prison medical officer maintains a close liaison with the hospital and specialist facilities of that Service.

There are now over 70 establishments under the control of the Prison Commissioners and they vary very much in their size and purpose, depending on the class of inmate, and their medical requirements differ accordingly. At the larger establishments the medical work is in the hands of whole-time medical officers, whereas the small institutions are served by part-time doctors who are usually local general practitioners. The more important prisons may have as many as four or five full-time medical officers, together with psychologists and assistants for psychological testing. Principal and senior medical officers have advisory and other duties in connexion with small groups of establishments. At a few prisons there are also psychiatric social workers. The medical officer is called upon to make medical and psychiatric reports to the Commissioners from time to time. In remand prisons the preparation of reports to court and the giving of verbal evidence, particularly in regard to the mental condition of offenders, are important aspects of the work. Postgraduate experience in psychiatry is therefore an advantage. Surgical and psychotherapeutic units are established at selected centres, where the work is undertaken mainly by visiting specialists working on a sessional basis and in close association with the regular medical staff.

The national scales of remuneration are in accordance with the general civil service scales. The appointments are pensionable, without contributions being required, and on retirement normally a pension and lump sum gratuity are payable. There is also a contributory widows' and children's pension scheme. Pensionable service under the National Health Service and established civil service may be aggregated for pension. Unfurnished quarters, when available, are provided at a moderate rental. Permanent appointments are made by the Civil Service Commission, 6, Burlington Gardens, London, W.1, to whom inquiries for such appointments should be addressed. On occasion temporary full-time appointments are available, and for such appointments, as well as for part-time appointments, particulars can be obtained from the Prison Commission, Horseferry House, Dean Ryle Street, London, S.W.1.

### Overseas Civil Service

In the medical departments of the Governments of the territories overseas for which the Secretary of State of the Colonies is responsible, openings occur in all parts of the world. Many future appointments are likely to be made on the bases of short-term contracts, usually renewable. Doctors in the N.H.S. may take temporary appointments overseas up to six years without loss of pension rights. In some territories permanent appointments are available; candidates selected for these appointments become members of the medical branch of Her Majesty's Overseas Civil Service. Candidates must normally be British subjects whose names appear on the *Medical Register*, and should not be over 45 years of age.

Full terms and conditions of service may be obtained from the Director of Recruitment, Colonial Office, Sanctuary Buildings, Great Smith Street, London, S.W.1.

### Missionary Service

For doctors with a call to dedicated service, the mission field offers great opportunity for the exercise of medical knowledge and skill where the need is greatest. Though the financial rewards are small, a Christian doctor will find this work immensely satisfying. Any who have this service in view are advised to spend eighteen months or two years in resident appointments after qualification. Special missionary training is required by some of the societies. Although long service is preferred, short-term offers are considered by most societies. Application may be made to any of the missionary societies, or to the Secretary of the Medical Advisory Board, Edinburgh House, 2, Eaton Gate, London, S.W.1, or to the Secretary, Medical Missionary Association, 31, Bedford Place, London, W.C.1.

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## OPENINGS IN INDUSTRIAL MEDICINE

Industrial medicine can be especially attractive to a doctor who is interested in preventive medicine and who wishes to do clinical work. It offers opportunities for treating the injured and sick, for the surveillance of vulnerable groups of workers such as the young and old, and those employed in dangerous trades, and also for studying the effects of the working environment on health. The doctor may also help to identify occupational hazards and control them. He often has the advantages of constructive criticism from colleagues, a close contact with other professions, and assistance from nurses and secretaries in the routine work. He has the material assets of holidays with pay, pension schemes, and definite hours of work, but he has to deal with emergencies and is expected to keep abreast with new knowledge by reading and by contact with professional societies.

Industrial medical services are extensive without being comprehensive and, although they are not linked with the

National Health Service, many of the doctors working part-time in industrial medicine are general practitioners. In the United Kingdom there are approximately 400 whole-time and 3,000 part-time doctors in industry. In addition some 1,700 or more general practitioners are Appointed Factory Doctors who examine young persons and others employed in dangerous trades as required by law. Most of the industrial medical officers are employed in factories, but recently services have been developed in mines, transport undertakings, shops, and offices; many universities also have services for their students and staff. Medical services in industry have grown largely as a result of the voluntary enterprise of employers; some provide for no more than the treatment of casualties, while others fulfil the modern conception of occupational health—namely, to promote and maintain the highest degree of physical, mental, and social well-being for all types of workers.

Appointments in industrial medicine are frequently advertised. Salaries vary according to age, experience, and qualifications. Medical officers are usually either on a definite salary scale or receive increments in accordance with the growing value of their work and length of service. A few doctors who have the interest and abilities to do research and to teach in this field are employed by the Medical Research Council units and university departments of social and industrial medicine. Occasionally there are vacancies for medical inspectors of factories in the Ministry of Labour and National Service and for medical officers in the Ministry of Pensions and National Insurance. Many of these appointments are not easy to obtain, but a doctor who has a good experience of clinical medicine and some post-graduate training in preventive medicine has a good chance of becoming a whole-time industrial medical officer and of doing work which can be both fascinating and challenging.

The Association of Industrial Medical Officers was formed in 1935 to bring together doctors employed full-time in industrial medicine in order to promote scientific study and to provide mutual help. In 1941 doctors working part-time in industrial medicine were admitted as associate members. The total membership is now nearly 1,000 and there are 12 local groups in the United Kingdom which hold frequent meetings. In addition three meetings of the whole association are held every year, two in London and one in the provinces. The association has adhered to its original aim to confine itself to scientific and social activities. It publishes its own *Transactions*.

## PROFESSIONAL ORGANIZATIONS

### British Medical Association

The British Medical Association, which was founded in 1832, now comprises a membership of over 70,000, of whom about 16,000 are overseas. Its main objects are to promote the medical and allied sciences and to maintain the honour and interests of the medical profession. Although membership is entirely voluntary, 80% of practising doctors in this country are members and the Association can therefore claim to speak for the whole of the profession in its dealings with Government and other authorities.

The Association is often described as a federation of local medical societies known as Divisions. These are grouped in Branches. Every member is automatically included in the membership of the local unit in whose area he resides or practises. The Divisions hold regular meetings for clinical, social, or business purposes, and every member is entitled to take part in their activities.

Other privileges of membership of the Association include the receipt each week of the *British Medical Journal* and its *Supplement*, the latter being the official means of communication between Headquarters and the individual member. In addition to the *Journal* the Association publishes a number of specialist journals, *Abstracts of World Medicine*, and, from time to time, reports of special subjects. In collaboration with the Pharmaceutical Society of Great Britain it compiles and publishes the *British National Formulary*. The Association also possesses one of the world's leading medical libraries. This contains 70,000 volumes, and 1,600 periodicals are received regularly. The library has a large lending and circulating service and members are entitled to use its service for obtaining references. There are reading-rooms for those who are able to call at B.M.A. House. The Association also maintains a large film library and an extensive range of films is available for local meetings. Lastly, the help of a highly skilled and experienced staff at Headquarters is available to members in connexion with the many problems which arise in practice.

The policy of the Association is determined by the Representative Body, which is composed of representatives from all the Divisions. The Council is the executive of the Representative Body and is responsible for the general management of the Association affairs. Its method of election ensures representation of all parts of the United Kingdom, of the medical branches of the Fighting Services, the Public Health Service, and the Overseas Branches. Most of the day-to-day work of the Association is carried out through a large number of standing and special committees. The Central Consultants and Specialists Committee (which also has a regional organization) acts with the Royal Colleges on all matters affecting hospital staffs. The General Medical Services Committee acts as executive of the Conference of Representatives of Local Medical Committees in all questions affecting general practice in the National Health Service. The Public Health Committee, which has a working agreement with the Society of Medical Officers of Health, deals with all matters relating to the Public Health Service. Other committees of the Association are concerned with private practice, ethical questions, and the encouragement of medical science and research, and there are also special committees which look after the interests of groups of members in varying specialties and also joint committees with other bodies for the consideration of matters of mutual interest.

The Association has important Branches in Australia and New Zealand and flourishing local units in many parts of the British Commonwealth. The Medical Associations of Canada, South Africa, India, and Ceylon are affiliated to the British Medical Association.

### Society of Medical Officers of Health

The Society of Medical Officers of Health (Tavistock House South, Tavistock Square, London, W.C.1) is a body of medical officers engaged in public health work. It has branches and groups throughout Great Britain and Northern Ireland, New South Wales, Malaya, and, since 1957, East Africa, which meet regularly to discuss the medical and administrative aspects of preventive medicine. The council of the Society, representative of the branches and groups, is the governing body in respect of policy and finance. It examines all legislation concerned with the Ministries of Health, Housing and Local Government, Agriculture, Fisheries and Food, Education, the Home Office, and the Department of Health for Scotland, and with public health, and maintains relations with the public health departments of the universities and local government authorities. There is reciprocal representation on the Public Health Committee of the British Medical Association and the council of the Society, and the Public Health Committee acts in conformity with an agreement with the Society of Medical Officers of Health under which medico-political activities are undertaken by the Association.

The mental health group, inaugurated in March, 1957, continues to expand and to attract to it an increasing number of consultants in the mental health field. A recent development is the formation of a joint body comprised of equal numbers of members of the Royal Medico-Psychological Association and of the Society. This body will address itself in the first instance to considering common

problems in the care of the mentally disordered, with particular reference to the report of the Royal Commission on Mental Illness and Mental Deficiency. The teaching group, established at the same time, has concerned itself with the future of the medical services and its implications for the teaching of social medicine, with the content of social medicine teaching, both undergraduate and postgraduate, and with teaching methods. The Society is fully conscious of the need to keep members abreast of modern practice and developments in the field of public health. Accordingly, the various groups of the Society arrange refresher courses for their members, which are well attended. Courses are held by the county borough, county district, dental, maternity and child welfare, mental health, school health, and Services groups of the Society.

### Medical Women's Federation

The Medical Women's Federation (Tavistock House North, London, W.C.1) works closely with the British Medical Association, and is represented by a woman member on the General Medical Services Committee. The Federation is the only professional organization consisting solely of medical women, and is thus in a position to represent the interests of women doctors and to deal with the problems affecting them as a minority in the profession. It also considers and investigates medical matters of special concern to women doctors. The Federation has active local associations all over the Kingdom, including a large London association, and an association of its overseas members. These associations meet regularly, and the *Journal* of the Federation is published quarterly for private circulation among its members.

### British Medical Students' Association

This association was founded in 1942, and its membership now includes over 90% of the medical students in the country. It is purely a professional organization, providing a means of communication between medical students in the different universities and hospitals, and also between British students and those in other countries. It presents the medical students' point of view to the medical profession, to Government departments, and to other interested bodies. The organization of the association depends on an annual general meeting at which an executive committee is elected, and on four regional councils. Both clinical and preclinical conferences and "schools" are arranged from time to time, and these are appreciated not only for their academic interest but also for the opportunities which they provide for meeting fellow students from other medical schools. Local activities of the constituent organizations of the association include lectures, visits, discussions, and the showing of films from the B.M.A. and other film libraries. Amongst its publications are the *British Medical Students' Journal*, which appears once a term, and an annual list of vacation appointments for those members requiring work in hospitals during vacations.

The principal activity of the B.M.S.A. during the past three years has been the work of its medical education subcommittee. The subcommittee has prepared reports on entry to the medical course, the first year of medicine, the preclinical curriculum, and this year, as a result of a carefully conducted survey of the clinical curriculum, hopes to publish its views on the clinical section of the medical course. These reports are available to all who are interested in medical education, and the subcommittee is only too pleased to receive comment on the reports.

The association is represented on those committees of the B.M.A. that deal with matters affecting students and newly qualified doctors, and has recently taken an active interest in the formation of the new Junior Members Forum. The happy liaison with the College of General Practitioners has been continued, and the association's representatives sit on the undergraduate education committee of the College. Close interest is maintained in the British Student Tuberculosis Foundation and the United Kingdom Committee of the World Health Organization. Active co-operation exists between the B.M.S.A. and other student organizations.

The B.M.S.A. is a founder member of the International Federation of Medical Student Associations, whose membership now embraces the associations of 21 nations. I.F.M.S.A. continues to develop successfully, and is recognized by the World Medical Association and Unesco. Under its auspices the annual students' international clinical conference has been held this year in Scandinavia. Opportunities also exist for individual clerkships in hospitals abroad, and the B.M.S.A., through the offices of a student international secretary, does much to assist British students to take advantage of these and other opportunities to travel and see something of medicine in other countries. Similarly, the B.M.S.A. makes arrangements for many foreign students to visit hospitals in this country. This year the number of students making use of these facilities has greatly increased. To encourage and assist deserving British students to attend courses and hospitals abroad the B.M.S.A. established four years ago a travel fund. This year the administrators of the fund awarded twenty-four scholarships of the total value of £200. It is hoped to improve on this figure in future years.

As its honorary president this year the B.M.S.A. has Sir Tudor Thomas, a past president of the B.M.A. The address of the association is B.M.A. House, Tavistock Square, London, W.C.1.

## ADVISORY BUREAUX

### Medical Practices Advisory Bureau

The National Health Service brought many changes in traditional methods of entering practice, and it was felt that there should be some advisory body which, though not directly linked to central or local government, could maintain effective liaison with executive councils, hospital management committees, the medical practices committee, etc., and at the same time command the confidence of the profession. To meet this need the Medical Practices Advisory Bureau was established in 1948 as a department of the British Medical Association under the direction of a medical member of its Secretariat.

The bureau has two functions; it acts as an agency and source of information concerning openings in various fields of practice, introducing partners, assistants, and locums. Secondly, it is prepared to advise on individual and personal problems associated with entry into and the day-to-day conduct of practice. For example, though it is not the function of the bureau to give legal advice, there are many questions concerning partnership agreements where the advice of an experienced doctor is needed as well as that of a lawyer. It is the accepted policy of the Association that there should be a legal agreement between principals and assistants in all cases, and the bureau can supply a model form for this purpose.

These services, which are available to all doctors, are, with very few exceptions, free of charge to members of the B.M.A. Others may be required to pay nominal charges for the agency services. Inquiries should be addressed to the medical director either at the Head Office of the Association in London or at the Branch Offices—33, Cross Street, Manchester 2; 7, Drumsheugh Gardens, Edinburgh 3; 9, Lynedoch Crescent, Glasgow C.3.

### Commonwealth and International Medical Advisory Bureaux

The Council of the Association has set up at Headquarters, Tavistock Square, two bureaux, one of which welcomes doctors visiting this country from other parts of the British Commonwealth and provides them with a personal advisory service. The other serves a similar function for doctors from countries outside the Commonwealth.

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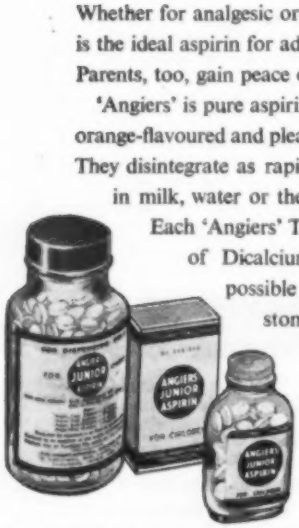


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The Commonwealth Medical Advisory Bureau invites doctors from overseas to write to its medical director (Dr. R. A. Pallister), preferably well in advance of their proposed visit, stating their expected date of arrival, whether accompanied by their family, how long they propose to stay, and in what ways assistance can be given. If an overseas doctor wishes to visit hospitals or seeks advice about postgraduate courses, he should add particulars of his professional experience. The medical director will also be pleased to see him at the bureau as soon as possible after his arrival to talk over any points on which he may need advice or assistance. Contact is maintained with medical schools, postgraduate institutions, hospitals, and other bodies able to assist overseas visitors in the educational field. A register of suitable hotels and lodgings is maintained by the bureau, and general information is given on travel, customs duties, facilities for sport, exhibitions, and the like.

The other bureau is the International Medical Advisory Bureau, also located at B.M.A. House and also under the directorship of Dr. Pallister. Here again information is obtainable on postgraduate education, visits to hospitals and clinics are arranged, and assistance is given to visitors in finding accommodation and in other respects. The bureau also arranges holiday exchanges between the families of U.K. members and their Continental colleagues; last year nearly 200 such exchanges were arranged.

### Medical Insurance Agency

The Medical Insurance Agency (B.M.A. House, Tavistock Square, London, W.C.1) is a recognized agent of all the leading insurance offices, and is thus able to obtain for members of the medical profession the best terms available in the insurance market. The Agency, which was established in 1907, distributes all its surplus to medical and dental charities. Special loan facilities are available for the purchase of houses, motor-cars, and equipment. Information can be obtained from the chief office of the Agency (Telephone No.: Euston 6031) or from its branches in Birmingham, Bristol, Cardiff, Dublin, Edinburgh, Glasgow, Leeds, Manchester, and Newcastle.

## DEFENCE SOCIETIES

The *Medical Defence Union* (Tavistock House South, Tavistock Square, London, W.C.1) has a membership in excess of 45,000. The Union accepts medical and dental practitioners as members, whether practising in the United Kingdom or in certain countries overseas. A particular appeal for early membership is addressed to the provisionally registered practitioners when they commence their hospital duties. Special arrangements exist with regard to the protection of temporarily registered medical practitioners who visit the United Kingdom to obtain further experience or a higher qualification.

All members elected since October, 1953, pay their second and subsequent subscriptions on the anniversary date of their application for membership; members previously elected pay their subscriptions on January 1 in each year. The Union provides advice and full financial indemnity for any member concerned with, or involved in, medical litigation raising a question of professional principle or an allegation of professional negligence. The subscription for newly qualified practitioners is £1 for the first three years, £2 for the fourth year, and £3 thereafter, with special rates for overseas practitioners. Since its foundation the Union has spent over £750,000 in the payment of damages and costs incurred in protecting its members.

The *Medical Protection Society* (Victory House, Leicester Square, London, W.C.2) has a membership of over 34,000. Membership is open to registered medical and dental practitioners, including those provisionally registered. Members are afforded advice and assistance in all matters of professional difficulty, with unlimited indemnity against legal expenses incurred in defending and conducting cases on their behalf, also against costs and damages in those cases in which adverse verdicts result. Legal expenses and amounts paid by way of adverse costs and damages greatly increased during the past year. Indemnity is secured by financial resources of £220,000 and reinsurance with Lloyd's underwriters. There are special provisions for members practising overseas: practitioners throughout the Commonwealth are joining the Society in increasing numbers.

The *Medical and Dental Defence Union of Scotland* (105, St. Vincent Street, Glasgow, C.2) has a membership of approximately 8,500. The number of claims appears to be reasonably steady, but the amounts claimed show a tendency to increase. A number of claims have been defended successfully and the professional reputation of the doctors concerned completely vindicated in the Courts, sometimes at a cost to the Union running into thousands of pounds. It is very rarely that anything is recovered, as most of the claimants are suing with the help of Legal Aid.

## NURSES AND MEDICAL AUXILIARIES

### The General Nursing Council and the Royal College of Nursing

The differences in the respective responsibilities of the General Nursing Council and the Royal College of Nursing in the field of nursing education are not always understood.

The General Nursing Council is the statutory body responsible for the conduct of nursing education in hospitals approved as nurse-training schools for admission to the *Register of Nurses* or to the *Roll or Assistant Nurses*. The Council was, by the Nurses Registration Act, 1919, set up to form and maintain a *Register of Nurses*, subdivided into a general and special parts, and to lay down conditions of admission to it. Similarly in 1943 the Council was required by legislation to form and maintain the *Roll of Assistant Nurses*. Admission to the *Register* is by examination on completion of three years' hospital training, and among the functions exercised by the Council are the approval and inspection of training schools, the drawing up of syllabuses, and the appointing of Boards of Examiners. Admission to the *Roll* is on completion of two years' training in an approved training school under the supervision of State-registered nurses; the assessment conducted by the Council may be taken at any time after the completion of one year's training.

A further aspect of the Council's responsibility for basic nursing education is the adaptation of training to meet changing needs and conditions within the Health Service, as illustrated in recent years by approval given to experimental schemes for integrated training—for example, general and sick children, general and mental, general and public health nursing.

In Scotland a separate council has similar obligations to those of the General Nursing Council for England and Wales. In Northern Ireland the Joint Nurses and Midwives Council is the parallel body.

The Royal College of Nursing is an independent voluntary body founded by leaders of the nursing profession in 1916, before the attainment of State registration, which was one of its early objectives. Its activities, laid down in its Royal Charter, 1928, can be grouped under three headings: educational, professional, and welfare.

The educational programme of the College provides opportunities for State-registered nurses who have completed their basic training to undertake advanced study in preparation for administrative and teaching posts in hospital and public health work or for other senior positions. The

College believes it is essential for nurses who wish to take up higher appointments to be so prepared. Courses provided by the College include a two-year course in preparation for the Sister Tutor Diploma of the University of London and a course for the Health Visitor Certificate of the Royal Society of Health. The College also awards its own certificates on successful completion of courses given for nurse administrators and teachers, for ward and departmental sisters, and for occupational health nurses. Refresher courses and study conferences are also arranged.

The Scottish Board of the College and its Committee for Northern Ireland also arrange post-registration courses and the Birmingham Centre of Nursing Education provides refresher courses for students in that area.

The respective functions of the two bodies with major responsibility for nursing education was given in greater detail in the *British Medical Journal* of September 7, 1957 (p. 586).

### Medical Auxiliaries

The *Board of Registration of Medical Auxiliaries* (B.M.A. House, Tavistock Square, London, W.C.1) exists to maintain and publish a register of properly qualified medical auxiliaries. The Board helps the medical auxiliary professions to attain or to consolidate and improve their professional status, and insists that each such profession shall, before registration, establish at least the basic principles for training and practice. In return it offers the registered persons protection in that they and they only are recommended to doctors as qualified to practise their particular specialty.

Separate or sectional registers of members of each branch of medical auxiliary work are printed, and are supplied free to medical officers of health, hospital management committees, hospitals, executive councils, public libraries, medical practitioners, and others, the circulation lists varying according to the particular group of auxiliaries.

The register is composed of the following sections: audiology technicians, chiropodists, dispensing opticians, operating theatre technicians, orthoptists, radiographers, and venereal disease technicians. Copies of any or all of the current sections will be sent free to medical practitioners on application to the registrar.

The *Chartered Society of Physiotherapy* (Tavistock House South, Tavistock Square, London, W.C.1) approves 34 schools, connected with hospitals in London and the Provinces. These schools prepare students for the Society's examinations, which are recognized by the Ministry of Health under the National Health Service (Medical Auxiliaries) Regulations, 1954. Successful candidates may practise as Chartered Physiotherapists.

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The Trading Representations (Disabled Persons) Act received the Royal Assent on July 23. Its purpose is to control the attempts of certain traders to exploit the sympathy and good will which is generally felt for blind and other disabled people by making misleading and exaggerated claims about the extent to which their business provides employment for, or otherwise benefits, such people. It applies only to representations made in the course of postal or house-to-house canvassing, since it is these particular forms of trading which are thought to have given rise to abuse. The effect of the Act is that after January 1, 1959, it will be a punishable offence to make the kind of representations referred to in the Act unless the person carrying on the business has his name included in a register to be set up by the Minister of Labour and National Service. This provision will not apply where the business is carried on by a local authority, by a non-profit-making body, or by a disabled person selling his own products. Any person guilty of an offence under the Act will be liable on summary conviction to a fine not exceeding £100 or imprisonment for a term not exceeding three months, or both.

# To-day's Drugs

*In this column we publish from time to time authoritative notes on a selection of drugs in current use.*

**Codelprone** (Merck Sharp and Dohme Ltd.).—Each tablet of this substance contains prednisolone 2 mg., meprobamate 200 mg., and dried aluminium hydroxide 200 mg. The rationale of this mixture is that the calming effect and spasmolytic action of meprobamate and the buffering action of the antacid are added to the anti-inflammatory action of the steroid. It is therefore put out for use in all those conditions for which prednisolone is at present prescribed; its indications and contraindications are those of prednisolone. The dosage recommended is the lowest which keeps the symptoms adequately controlled; an initial dosage of 2 tablets three or four times a day is suggested.

N.H.S. basic price: 100 tabs., 72s.

**Bemaco** (B. M. Laboratories Ltd.).—The composition of these tablets is: chloroquine phosphate 42 mg., acetylsalicylic acid 162.5 mg., calcium carbonate 45 mg., ascorbic acid 25 mg., and citric acid 15 mg. The rationale here is that the action of chloroquine potentiates that of acetylsalicylic acid, and for this reason its use is advocated in rheumatoid arthritis and allied arthropathies in a dose of 6 to 12 tablets a day. But chloroquine can hardly as yet be said to have been accepted by most clinicians as of proved use in rheumatoid arthritis.

N.H.S. basic price: 100 tabs., 10s.

**Chloromycetin Palmitate Suspension** (Parke, Davis and Co.).—Chloramphenicol (chloromycetin) palmitate has not the bitter taste of chloramphenicol. The palatability of this suspension thus enables the antibiotic to be given without difficulty to children who cannot swallow capsules. This compound is broken down in the bowel, and the chloramphenicol so liberated is absorbed, exerting the same action as if it had been administered as such.

Chloramphenicol is superior to any other antibiotic for the treatment of typhoid and paratyphoid fever and of severe cases of salmonella gastro-enteritis; for some forms of meningitis, particularly those due to coliform bacilli or *H. influenzae*, both because of the sensitivity of these species and because chloramphenicol attains higher concentrations in the cerebrospinal fluid than other antibiotics; and for infections of the air passages due to *H. influenzae*. It is also valuable, although its superiority to other drugs has perhaps not been so clearly proved, in acute laryngotracheo-bronchitis, whooping-cough, and the virus pneumonias. As a broad-spectrum antibiotic it has many other possible uses for which other drugs are as good or better.

Whether this distinction between indications for which there are or are not equivalent alternatives is important depends on the view taken about the risk of producing aplasia of the bone marrow. The frequency of this complication is much disputed. A recent author reports 7 cases seen in one city within a year, while others have used the drug freely without ever encountering it. No second factor contributing to it is known. The risk is probably greater when large doses are given or treatment is prolonged, although quite small doses have also had the same effect. It is probably unwise to continue a course for much more than a week, but this should rarely be necessary.

N.H.S. basic price: 60 ml., 10s. 8d.

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**Correction.**—We regret that the N.H.S. basic prices for "nilergex" tablets were given incorrectly (August 23, p. 507); they should be: 100 4-mg. tabs., 18s. 4d.; 100 12-mg. tabs., 33s. 4d.

*. . . and though there are many—perhaps too many—analgesics available to the practitioner, the balanced properties of Hypon make it a tablet far more effective than most. Extensive tests show that Hypon has the power not only to relieve pain but to do so very rapidly. Constipation, so often encountered following the administration of codeine is effectively counteracted by the addition of phenolphthalein. Caffeine offsets the depressing effects of aspirin and phenacetin. Hypon is invaluable where prolonged administration is called for (chronic rheumatic conditions for instance). Furthermore, the antipyretic properties of Hypon tablets are of particular value in the treatment of the febrile states of influenza, tonsillitis . . .*

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# Correspondence

*Because of heavy pressure on our space, correspondents are asked to keep their letters short.*

## Human Mammotrophin

SIR,—At the Annual Meeting of the B.M.A. this year, during a plenary session of the Section of Surgery, Dr. A. C. Crooke opened a discussion on advanced carcinoma of the breast (*Journal*, July 26, p. 225). He emphasized the complexity of the hormonal factors controlling breast development, and, with every justification, warned his audience against uncritical interpretation of hormone assays in the human. He stated that I had claimed to have detected a mammotrophic hormone in human urine but that my results have been challenged and other workers have failed to confirm them. I should be grateful if I may be allowed to comment on this statement.

It has been assumed for several years, and with increasing conviction, that human female urine must contain, in small and probably minute quantities, a protein hormone of pituitary origin which in conjunction with ovarian steroids controls the proliferation by mitosis of mammary epithelium and is thereby responsible for the production of a duct system. In 1955, Dr. E. F. Scowen[1] suggested that it should be possible to detect such a hormone by injecting a urinary extract containing an adequate proportion of normal urinary protein into weanling male mice. These animals were suggested because the high growth potential of their rudimentary mammae enables them to be rapidly feminized by specific exogenous stimulation and their simplicity of structure provides an ideal zero baseline for the detection and estimation of an artificially induced growth response. The proposal was then subjected to experimental test and an unmistakable growth response was induced in the mammae of weanling male mice of a commercial strain by injecting a Klinefelter extract of the urine of a normal pre-menopausal woman.[1]

During the next year this initial and successful experiment was repeated on a large scale, again using commercial mice but omitting the Klinefelter extraction as being untrustworthy. The majority of a large number of urines from healthy women was shown to induce an unequivocal mammary growth response in weanling male mice.[2] We were then compelled to discontinue the use of commercial mice because of serious, frequent, and unmanageable irregularities in their mammary reactivity. A reactive pedigree strain (Strong A2G) was then discovered.[3] One breeding colony of this strain is maintained under strict genetic control in our own laboratories. Two other colonies are kept under similar conditions—one at the Laboratory Animals Centre of the Medical Research Council and the second at the Imperial Cancer Research Fund's laboratories at Mill Hill. We are fully convinced that the above precautions are essential if accurate and consistent results are to be obtained by the use of intact mice.

Some time ago, in reviewing our problems, we decided that an accurate bioassay of human mammotrophin calls for a far more rigorous quantitative method of extracting urine protein than the simple procedures we had at first employed. This problem is being investigated but is still unsolved. We were also disturbed by the lack of any rigid proof that the mammotrophic responses observed in our mice injected with human urine were induced by a pituitary hormone of *human* origin. It is becoming increasingly difficult to deny that one of the major functions of the oestrogenic ovarian steroids is to release mammotrophic hormones from the anterior pituitary by selective stimulation of its mammotrophic cells. It was therefore difficult to escape the probability that if an injected urine contains oestrogens, even in very small amounts, enough mammotrophin will be released from the *mouse* pituitary to induce mammary growth. In the face of these doubts and difficulties we decided to use totally hypophysectomized mice and discontinue the use of intact animals. This removed many of our difficulties. It has provided good evidence that the mammogenic agent in human urine is an anterior pituitary hormone of human origin and in other respects it has proved to be a sensitive test object for the investigation of pituitary function.

We are not surprised that other observers have failed to reproduce our initial results in intact mice. We now consider the investigation of human pituitary function in the intact animal to be fallacious and confusing. To the best of our knowledge the work we have done on hypophysectomized animals has not been repeated.

Dr. Crooke suggested that our results may be important and should be confirmed. We are encouraged to hear this, but we hope that those who may embark on this problem will use totally hypophysectomized weanling males of a reactive and carefully bred strain. The total removal of the anterior pituitary in a 10-gramme mouse is a far less lethal and formidable operation than is generally supposed. One trained operator can easily provide 80 totally hypophysectomized weanlings a week.—I am, etc.,

London, W.C.2. GEOFFREY HADFIELD.

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## Anorexia Nervosa

SIR,—As one of us (W. S.) was, in 1951, one of the first to report the use of modified leucotomy in the treatment of anorexia nervosa, we are interested to see that Dr. E. Williams (*Journal*, July 26, p. 190) still recommends the use of this treatment as the alternative to intubation when all else has failed. However, we hope that it may now be generally possible to avoid modified leucotomy, since we have been very impressed with the effects of combining large doses of chlorpromazine with a modified insulin regime, provided the patient is confined strictly to bed. We have given our patients up to 1,000 mg. of chlorpromazine in the 24 hours (the average dose being about 600 mg.) and insulin in doses of around 60–80 units; the dose of chlorpromazine is, however, reduced when they are allowed up again. No undesirable complications have occurred so far in 11 patients who conform closely to Gull's original description of anorexia nervosa. We stumbled upon this combination accidentally, after we had learned about the possible value of reserpine and chlorpromazine in anorexia nervosa. But we are not very impressed with the use of either of these drugs alone, and reserpine can make patients very depressed.

For many years now one has tried to use modified insulin alone, but it has seemed to us to have been singularly unsuccessful in most patients, despite the hunger-producing effects of the insulin regime. The effect of adding chlorpromazine to the insulin seems to break down the patient's previous ability to go on refusing food. Dr. D. Stafford Clark (*Journal*, August 16, p. 446) stresses the long time needed to restore weight in anorexia nervosa under an ordinary hospital regime, combined with psychotherapy. The average duration of each admission in his series of 13 was about 3½ months, and the average weight gain during this time was 22 lb. (10 kg.). We have found that an average of 4.2 lb. (1.9 kg.) a week was gained by our 11 patients with their combined treatment, their average stay in hospital being 32 days. One patient, for instance, gained 32 lb. (14.5 kg.) in 56 days, and another 25 lb. (11.3 kg.) in 27 days, the lowest in the series gaining only 11 lb. (4.9 kg.) in 19 days before taking her discharge against advice. We have rarely seen such rapid restorations of physique in anorexia nervosa as we have recently been obtaining with this combination of treatments skilfully applied, but no doubt we shall also meet with more failures later on.

We have found psychotherapy to be generally unnecessary during the initial phase of the recovery of lost weight. But the general handling of the patient has to be sensible and firm, and the patient must be supervised and left in no doubt that she will not be allowed out of bed until the desired gain in weight has occurred. Before the advent of combined insulin and chlorpromazine treatments this firmness

and supervision alone frequently failed. Psychotherapy and support does, however, seem necessary in addition to maintenance doses of chlorpromazine in the follow-up stage in order to prevent relapse when the patient has to return to conditions which may have helped to bring about or precipitate the illness. We have not found that the use of chlorpromazine alone can prevent relapse after discharge. Our longest follow-up is now three years, and so far there have been two bad relapses in those who had initially done very well; one of these has responded to a further course of combined treatment.

We hope to report our findings in greater detail later on if they continue to prove worth while, but meanwhile there may be other patients who might benefit like ours from this new combined method, about which we have so far found no reference in the literature. We also feel with Dr. Stafford Clark that intubation is most undesirable, and that this illness is full of psychological components in the total picture.—We are, etc.,

P. J. DALLY.
G. B. OPPENHEIM.
WILLIAM SARGANT.

London, S.E.1.

REFERENCE

1 Sargant, W., *Lancet*, 1951, **2**, 87.

## Suckling in Infants

SIR,—We were interested in the recent paper by Drs. J. R. T. Colley and B. Creamer (*Journal*, August 16, p. 422) describing the pressures measured in the mouth during the bottle-feeding of babies. Our own paper correlating pressure measurements during bottle- and breast-feeding with simultaneous cineradiography is awaiting publication. Under the conditions which Drs. Colley and Creamer describe in their paper, the pressures they record are exactly as we would expect. They have used their findings to criticize our description of a squeezing action of the tongue upon the bulb of the teat, despite the fact that we clearly stated that, unless the lumen of the neck of the teat was occluded or very much narrowed, the squeezing action of the tongue was ineffective.[1] We also stated that it was rare for the baby to be able to occlude the neck and to express the contents of the usual type of commercially made teat sold in this country; the type of teat which Drs. Colley and Creamer used is advertised as being constructed so as to prevent collapse of the teat.

If a soft rubber teat is used, which permits the neck to be occluded and which the tongue may indent, there is a significant rise in pressure within the lumen of the teat. Kid-goats and calves, when feeding from their mother's teats, also obliterate the lumen of the teat sinus from above downwards, causing a rise of pressure within the lumen of the sinus comparable to that obtained inside a soft rubber teat.[2,3] We have also shown that the appearances of the teat sinus when milked by a standard intermittent negative-pressure milking-machine are not comparable.[4] In our first paper[1] we were very careful not to forecast the relative magnitude of the positive- and negative-pressure elements until we had made pressure measurements, but we did point out that, when using a soft teat, the amount of milk obtained during the phase when the lumen of the teat was obliterated by the tongue was roughly equivalent to the amount which flowed into the back of the mouth beyond the end of the teat prior to the initiation of this phase: we suggested how suction might be created.

The statement by Drs. Colley and Creamer that suction is produced by a backward movement of the tongue within the mouth is not quite correct. The idea that suction was created by the lowering of the tongue from the roof of the mouth from before backwards was put forward by Auerbach[5] in 1888. As we have shown,[1,6] it is this movement which assists in refilling the teat and which may cause milk to flow into the back of the mouth: but this action alone can never *empty* the teat. Emptying of the teat is associated with elevation of the tongue to the palate from before backwards, and simultaneously there is lowering and forward movement of the back of the tongue, thus continuing to create suction; it is the latter movement which makes the cavity in which the milk accumulates prior to swallowing.

For successful bottle-feeding with commercial teats of the type sold at the present time, the size of the hole in the teat is the most important factor. If the hole is big enough, fluid flows through it into the mouth cavity and the associated pressure gradient between the lumen of the teat and the cavity of the mouth is relatively low. But, if the hole is small, very little milk may be obtained, even though a very steep pressure gradient is created.—We are, etc.,

G. M. ARDRAN.
F. H. KEMP.

Oxford.

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SIR,—I was interested to read of the experiments carried out by Drs. J. R. T. Colley and B. Creamer (*Journal*, August 16, p. 422) to record intraluminal pressures of the oesophagus and pharynx, the mouth and teat, in bottle-feeding. The findings need careful study and will add to our knowledge of a subject which has so often been taken for granted.

When working with the late Professor James Whillis, in the department of anatomy, Guy's, on the evolutionary history of the orofacial muscles in relation to breathing, feeding, and dental arch form, cine films of bottle-feeding were made which confirm the observations of Ardran and Kemp.[1] Moreover, it seemed clear to us from the revealing monograph on sucking by Auerbach,[2] and from our records, that sucking should not be confused with suckling. They are not synonymous terms. In sucking, the lips need to be sealed effectively round the opening of the vessel containing the fluid. Auerbach described a sucking space in the mouth which is formed by lowering the jaw and depressing the anterior half of the tongue away from the hard palate whilst keeping the posterior half heaped up in apposition with a tensed soft palate. A resultant intraoral negative pressure allows this space to be filled with fluid which can then be swallowed.

In suckling, the lips envelop and support the teat but an air-tight seal is not necessary. The suckling process is brought about by a rhythmical furrowing and bulging action of the tongue in peristaltic fashion to pump and squirt the milk into the pharynx. A slow-motion cine film was made of an infant with bilateral hare lip and cleft through the upper alveolus but not through the palate. No intraoral negative pressure was possible. Suckling movements once started would continue for a few seconds when the teat was removed from the mouth. We were thus able to record the suckling cycle, obtaining a view of the oral cavity as far back as the soft palate. First, the jaw was lowered and a central grooving of the tongue allowed milk to flow into the teat. Then a sharp upward impinging of the blunt anterior margin of the tongue was followed by an elevation of the lower gum pad to nip the neck of the teat against the everted premaxilla (or upper gum pad had it been intact). This prevented the return flow of milk into the bottle while the teat was rolled out against the hard palate by a progressive bulging of the tongue from before backwards to express the milk. The central bulging of the tongue posteriorly against a tensed soft palate seemed to squirt the milk past the faucial margins in an almost continuous stream into the lateral food passages of the pharynx. How much milk was actually swallowed rather than squirted directly into the pharynx is not easy to say. There was no interference with the rhythm of breathing, and from studies in comparative anatomy I favour the latter method of transference as predominant. There was no backward movement of the tongue which could be likened to the action of a piston in an airtight syringe.

Innate patterns of muscle behaviour essential to life are stereotyped and common to all members of the species. I believe that the above pattern of muscle activity is primarily responsible for the suckling act and varies, not in form, but in degree from infant to infant, or in the same infant at different times; that intraoral negative pressures are to

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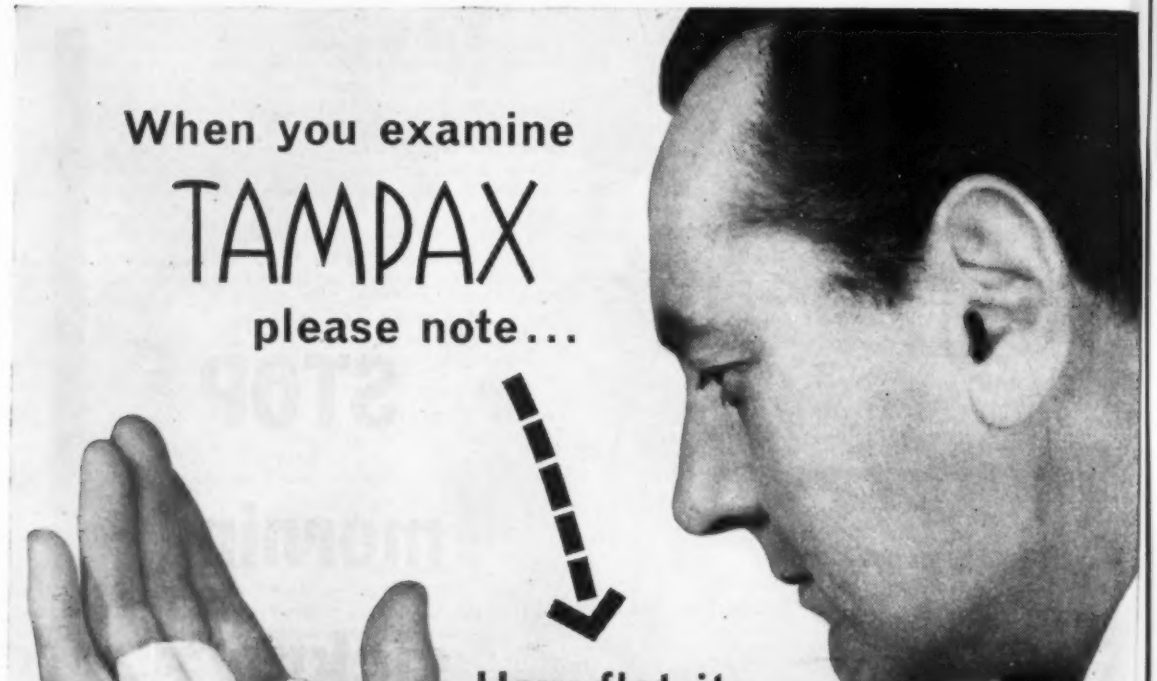


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38

be expected; that they are incidental yet helpful to the infant in suckling. I fully support the cineradiographic findings of Ardran and Kemp.—I am, etc.,

London, W.1. E. GWYNNE-EVANS.

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## Cow's Milk Allergy

SIR,—I read with great interest the article by Drs. B. D. Bower, D. G. Stanley-Roose, and O. H. Wolff (*Journal*, July 26, p. 195) entitled "Two Cases of Cow's Milk Allergy." I practise in a rural dispensary district in Co. Kerry, Ireland, and in the past four years I have come across six cases of cow's milk allergy in infants.

The following is a brief description of two of those cases.

*Case 1.*—I first saw this bottle-fed infant when she was 14 weeks old. The mother stated that she had been restless, vomiting, and refusing feeds for about four days. The child's general condition was very good. A roughness of the skin on the forehead was noticeable, and an erythematous rash was apparent on the chest and trunk. The family history was that the father had suffered from nasal catarrh, and that the paternal mother had had bronchial asthma all her life.

Treatment was as follows. Milk for feeds was prepared by adding, drop by drop, slowly stirring to avoid curdling, a mixture of 40 minims (2.3 ml.) of dilute hydrochloric acid (*B.P.*) in 2 drams (7 ml.) of water to one pint (0.6 litre) of cow's milk which had previously been boiled for 10 minutes. To prevent scratching, an ointment was applied consisting of a solution of coal tar dr. 1 (3.5 ml.); zinc oxide dr. 2 (7.8 g.); powdered starch dr. 2 (7.8 g.); soft paraffin dr. 1 (3.5 ml.).

*Case 2.*—This child was also a bottle-fed infant 18 months old. She had a widespread weeping eczematous condition on the face, chest, trunk, and limbs. The rash first appeared at the age of 3 months. It began on the forehead, and gradually spread over the face, chest, and trunk until the whole body was covered. In spite of this the child's general condition was good. The child's uncle suffered from asthma. The same treatment was prescribed as in the previous case, and in ten days there was a marked improvement. The weeping condition of the skin had completely disappeared, the irritation was not present and the child was now sleeping very well. The acid-milk treatment was continued for five months, and after that the child took untreated cow's milk without any ill effects.

The remaining four cases received the same treatment, and all responded excellently.—I am, etc.,

Co. Kerry. REDMOND M. O'BEIRNE.

## Intracellular Iron-containing Enzymes

SIR,—Your excellent leading article on iron stores and iron deficiency (*Journal*, May 17, p. 1167), prompts me to draw the attention of your readers to the mounting evidence that basic disorders of intracellular iron-containing enzymes and perhaps resulting cellular anoxia may underlie various anaemias, on the one hand, and haemochromatosis as well as nutritional siderosis in Africans on the other. Your leading article makes only limited reference to related literature on this aspect of these problems. Since the altered iron absorption and utilization in all the above conditions may perhaps be only secondary to primary lesion(s) of the intracellular iron-containing enzymes, further reference to relevant data seems timely.

The nature of the prevailing intercellular metabolism probably exerts a profound influence on the uptake and utilization of iron by any cell. This is supported (perhaps so diagrammatically as to go unnoticed in the present context) even by the unique capacity of red cell precursors to take up iron, this capacity apparently diminishing as these cells mature.[1] It is not surprising, therefore, that in anaemias iron metabolism is deranged in varying degrees in many cells in the body *other* than those concerned with erythropoiesis. The findings of Beutler,[2] quoted in your leading article, are indeed satisfying proofs of this. However, the presence of widespread cellular metabolic derangements in anaemic subjects is evinced also by the now generally recognized epithelial siderosis (see below) and megalocytosis even in non-haemopoietic cells in pernicious anaemia.[3 4]

That bodily iron uptake and utilization may be profoundly altered by anoxia is supported by several recent studies. Thus, Smith *et al.*[5] revealed that rats exposed to low oxygen tensions for as little as two hours absorbed far greater amounts of a single-standard test-dose of radio-iron than their controls at ambient oxygen tension. These workers suggested that their results indicated "that iron absorption from the gastrointestinal tract is a dynamic cellular process and not a matter of simple diffusion," a view favoured also by Granick[6] and others. Additional evidence, substantiating the effects of anoxia on cellular enzyme composition, was provided by Tappan *et al.*,[7 8] who demonstrated increased concentrations of certain oxidative and non-oxidative cellular enzymes as well as increases in skeletal muscle myoglobin in animals acclimatized to high altitudes. The repercussions of these enzyme increases on iron metabolism were not studied by these authors, but the work of Smith *et al.*, mentioned above, indicates the probable trends. Moreover, Colehour and associates[9 10] demonstrated that even acute hypoxia induced an almost immediate rise in transferrin and a fall in serum iron, while Prentice and Mirand[11] found an increased circulating erythropoietin for up to five days following acute hypoxia, this increase being maintained for much longer periods in rats with previously injured livers. Such increases in erythropoietin which occur also in anaemias may perhaps play a part in promoting increased iron uptake from the alimentary tract. This possibility is strongly supported by the recent demonstration of a two- to sevenfold increase in iron uptake by bone marrow cells exposed *in vitro* to "erythropoietin."[12] Thus, acute hypoxia can promote, probably through several mechanisms (direct and indirect) an increased iron uptake by the gastrointestinal mucosal cells and also, perhaps, by many other cells in the body as a result of the associated alterations of intracellular metabolism.

We have repeatedly expressed the opinion that iron overload alone is not the cause of experimental siderosis. Our recent investigations[13] disclosed that, in certain diets, iron uptake may not be a function of the iron intake alone. Thus, rats fed an iron-enriched maize-meal diet absorbed and accumulated almost three times as much body iron and twice as much hepatic iron as rats on an iron-enriched stock diet, even though the total daily intake of iron by the maize-eaters was far less (almost half that of the better-fed rats). There is some indication that some metabolic disorder, resulting in cellular anoxia, occurs at least in the livers both of pellagrins[14] and of rats fed a maize-meal diet.[13] Moreover, preliminary results of new experiments by us indicate that one hour's exposure to simulated high altitudes thrice weekly seems to intensify considerably the hepatic siderosis in rats fed iron-enriched maize but not in those fed an iron-enriched stock diet—both diets with equal calcium and phosphorus contents. The latter findings suggest that the "malnutrition" and intermittent decompression operate synergistically in facilitating the absorption and storage of iron in the liver—perhaps through a mechanism similar to that described by Prentice and Mirand and by Jacobson and co-workers.[15 16]

Sheldon[17] suggested that the intra-epithelial iron in idiopathic haemochromatosis was derived from the affected cells themselves as a result of some genetically determined distortion of cellular metabolism. There are already indications that the increased intracellular deposition of copper in Wilson's disease is attributable to some congenital derangement in protein metabolism with consequent formation of an abnormal protein with an undue affinity for copper. It seems possible that an analogous lesion may underlie haemochromatosis, the increased absorption and accumulation of iron being in fact secondary. A similar explanation may also perhaps apply to nutritional siderosis in Union Africans—in this case the intracellular metabolic disorder perhaps resulting from long-term chronic malnutrition. Thus, even in 1944 it was shown that in nutritional siderosis iron accumulates first on or around the hepatic cell mitochondria,[18] and the name "cytosiderin" was proposed for this pigment in order to indicate its derivation from cellular enzymes rather than from haemoglobin. This observation has apparently been confirmed by Richter's recent electron microscope study,[19] quoted in your leading article. It is notable, too, that, in experimental siderosis in rats, iron also accumulates first along the biliary poles of the hepatic epithelium in a manner directly comparable with that described in the early stages of human siderosis.[20]

It seems possible that the microcytic anaemias, so common among malnourished peoples, may also be secondary to intracellular metabolic disorders, produced by the inadequate diet, rather than simply to deficiency in iron intake alone. This seems all the more likely in view of Foy and Kondi's recent finding,[21 22] based on extensive studies, that there is no evidence for a deficient iron intake by peoples with microcytic anaemias studied by them.

the intake frequently ranging from 12 to 60 mg. daily and averaging 30 mg. per day. The hypo- and achlorhydria so often associated with microcytic anaemia may perhaps also be atribujable to metabolic abnormalities in the gastric mucosal cells. The efficacy of iron as a therapeutic agent may, in turn, be attributable not so much to specific "replacement therapy" as to the overall catalytic effects of administered iron on cellular metabolism throughout the body, with consequent improvements in the utilization of the limited amounts of proteins and other raw materials available from a diet defective in many ways. The dramatic improvements in gastric and other functions mentioned in your leading article as following iron therapy (even before the anaemia is corrected) seem to support this interpretation—the latter being all the more likely in view of the catalytic effect of iron on protein synthesis throughout the body recorded by Pommerenke and associates[23] almost a quarter of a century ago.

In this connexion it also seems interesting to mention here that, in a recent survey of liver biopsy material from two separate populations among which microcytic anaemias are extremely common, hepatocellular siderosis was found only in cases with megaloblastosis. This siderosis in such nutritional megaloblastic anaemias is also taken to indicate the occurrence of some derangement(s) of intracellular iron-containing enzymes as part of the widespread metabolic lesions presently attributed to vitamin $B_{12}$ deficiency. This conforms with Gillman and Gillman's suggestion[14] that the excessive iron found in livers of untreated cases of pernicious anaemia is not derived from degraded haemoglobin but rather from disrupted intracellular iron-containing enzymes.

All the above evidence, Sir, would seem to suggest that the time is now long overdue for a meticulous and intensive study of changes in intracellular metabolism in various anaemias and disorders of iron metabolism, along the lines pioneered by Beutler. Perhaps the present confusion in prevailing views on diseases associated with deranged iron uptake and storage may be eliminated when the basic derangements are understood in terms of the widespread repercussions of generalized disturbances of intracellular iron metabolism. It is strange indeed that, although such a vast amount of work has been done in determining so accurately the life span of red blood cells and hence of haemoglobin molecules, we still lack similar information about the rate of turnover of intracellular enzymes. It is indeed intriguing to consider that the regulation of iron uptake and utilization may yet be shown to be a function of the integrity and rate of turnover of these enzymes, despite the small proportion of bodily iron located within them as compared with the circulating haemoglobin.—We, are etc.,

THEODORE GILLMAN.
MICHAEL HATHORN.

Durban.


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## Toxic Reaction after "Kwells"

SIR,—A girl aged 8 years travelled on a bus from Glasgow to Monkseaton. Her mother gave her, before leaving, half of a "kwells" tablet, each of which contains hyoscine hydrobromide, 0.0046 gr. (0.3 mg.), to prevent travel sickness. A second half-tablet was given four hours later. Three hours later when the child reached her destination she was flushed, talking strangely, and oblivious of her surroundings. She was visually and auditorily hallucinated, seeing brightly coloured moving insects and animals, and hearing angels' voices talking to her. When examined, she was wildly excited, confused, and disorientated; she kept shouting at her mother to remove her shoes and put them on again. Temperature 104° F. (40° C.); pulse 120, full and bounding; dilated pupils, staccato speech, choreiform movements of hands and face.

As she had taken 0.3 mg. of hyoscine hydrobromide, a presumptive diagnosis of hyoscine poisoning was made. The child was given an emetic, warm bath, and caffeine (black coffee). Four hours later her temperature was normal, pupils were still dilated, but choreiform movements less pronounced; she was still mentally excited.

Next morning she complained of right earache. The temperature was not raised, but the right drum was slightly injected. She was now rational, clearly able to recall her hallucinatory experiences, and very emphatic about the bright colour of the insects and animals she had seen. Two days later she had a slight purulent discharge from her right ear, which responded rapidly to a course of penicillin and sulphadimidine.

Although this is considered primarily to be a case of hyoscine poisoning from a kwells tablet, the middle-ear infection may have contributed to the heightened response to the hyoscine in the tablet. Nevertheless, there was no antecedent history of earache before or during the journey. The child was not prone to delirium. Recovery was complete.—I am, etc.,

GEORGE L. HINDSON.

Monkseaton, Northumberland.

## "Sandosten"

SIR,—In your section on "To-day's Drugs" (*Journal*, July 19, p. 162) you referred to the antihistamine "sandosten" (thenalidine tartrate). You reported that ". . . clinical trials report a very effective action combined with the minimum of side-effects and toxicity."

We would like to call your attention to our report[1] of three cases of agranulocytosis apparently associated with thenalidine tartrate therapy. Two of these were fatal, the third recovered. We have received letters from two other physicians suggesting further association of agranulocytosis to this antihistamine. Although the incidence of such a toxic reaction must be extremely rare, we feel physicians should be warned of the possible relationship. Granulocytopenia should be looked for in any patient taking this drug who develops sudden fever, chills, or sore throat.—We are, etc.,

DONALD A. ADAMS.
SEYMOUR PERRY.

Los Angeles, 24, California.


REFERENCE

1 Adams, D. A., and Perry, S., *J. Amer. med. Ass.*, 1958, **167**, 1207.


## "Nilergex"

SIR,—This antihistaminic was introduced recently and it is claimed by its makers that it is non-sedative, has no soporific action, and it is most suitable for routine use in ambulant patients, especially those following their daily occupation. The makers do, however, state that about 1% of patients may feel drowsiness. My personal experience of the drug made it clear that I am of the 1%, and it convinced me that its side-effects may be unpleasant and sometimes serious.

I took "nilergex" tablets for two days to relieve hay-fever symptoms. On the first day I took three 4-mg. tablets and noticed some heaviness and drowsiness. On the second day I took one 4-mg. tablet at 7 a.m. and another at 12.45 p.m., together with 5 mg. dexamphetamine sulphate each time to prevent drowsiness. While driving my car at 2.30 p.m. I felt, after a distance of about two miles, a gradual increasing drowsiness which resulted in my falling to sleep for a fraction of a second. A sudden jolt woke me up. The car mounted the pavement. It resulted, fortunately, only in some damage to the car. I have been driving for over 30 years and never had a similar experience before. I wonder

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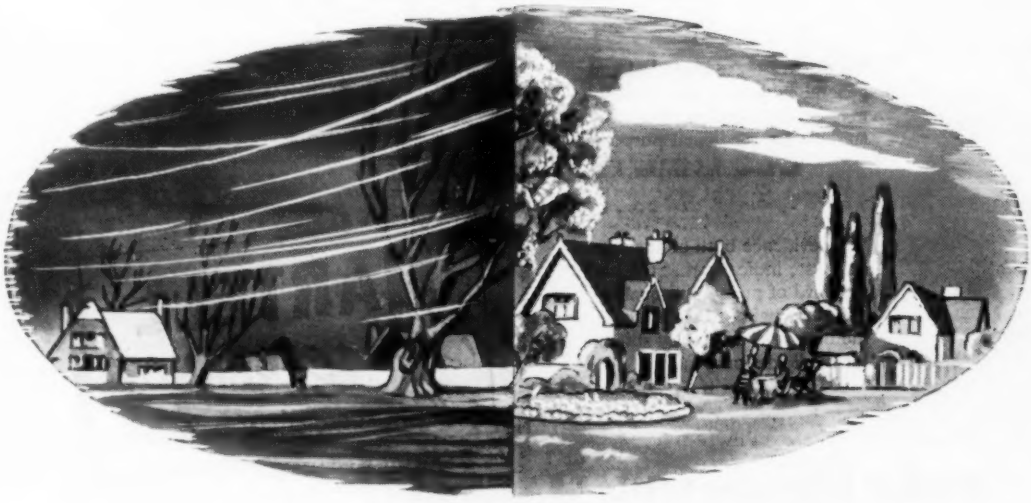

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*See Lancet, July 22, 1899, p. 219*

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*See Lancet, May 7, 1932, p. 992*

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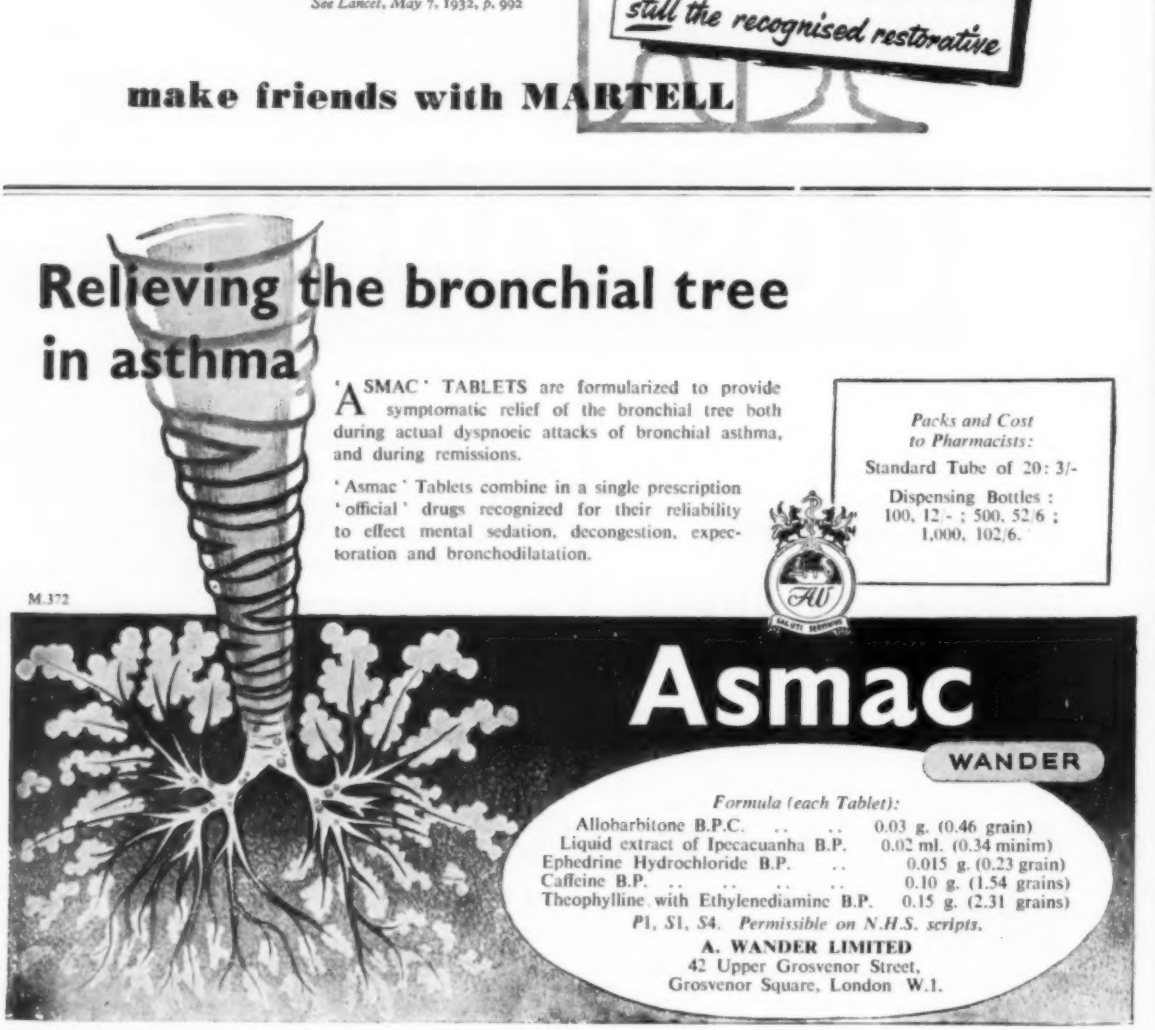

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what would have happened if I had taken eight tablets per day, which is the upper limit of the dosage range suggested by the makers.

It is necessary, therefore, to bear in mind the possibility of side reactions when prescribing nilergex, and patients should be warned of their possible occurrence.—I am, etc.,

London, S.E.25. A. FRY.

### Therapy Without Diagnosis

SIR,—Whilst catching up on my reading of the medical journals during my holidays, I was struck by the possible evil consequences which might result were any G.P.s to follow the advice given by some pharmaceutical firms. Example (1): "Nearly every patient you see can be helped by . . ." Example (2): "For diarrhoea, whatever the cause . . ." Example (3): "For the patient who just doesn't get well . . ."

Each of the above were main headlines in full-page advertisements. For those of us young enough to remember hearing our tutors loudly proclaiming the iniquities of "therapy without diagnosis," the response is to ridicule such advertising methods. Will the answer be heard so clearly, however, when time has reduced those voices to a whisper and the glossy temptations of these advertisers are bellowing in our ears?—I am, etc.,

Kilmarnock, Ayrshire. T. E. DURKIN.

### Calcium and Phosphorus Metabolism

SIR,—I was pleased to read (*Journal*, July 19, p. 165) the critical letter from Dr. Mary G. McGeown, whose work is very familiar to me and was indeed quoted in my article, and the letter from Mr. W. Milo Keynes in your issue of August 2 (p. 325). Dr. McGeown, I am sure, noticed that my article was not a criticism of the work of other workers but a statement of my own results of investigations on 85 patients. I completely agree, and in fact quoted Drs. McGeown and Bull,[1] that there is no satisfactory test of parathyroid function.

A raised serum calcium is significant enough to demand a thorough investigation of the patient to exclude parathyroid tumour, and I made this clear in my article. I do not, however, feel that even a persistently raised serum calcium is necessarily indicative of hyperparathyroidism. The original purpose of my investigation was both to determine whether these patients had hyperparathyroidism and to assess whether they presented sufficient evidence of the disease to warrant surgical intervention. I would like to stress that one of the patients in this series had a persistently high serum calcium (above 11 mg./100 ml.) without any other abnormality. This patient was kindly explored by Professor Ian Aird, but no parathyroid tumour was found. Mr. Milo Keynes states that at the Massachusetts General Hospital exploration has been carried out with success in patients with serum calcium readings of 10.8 mg./100 ml. At Hammersmith Hospital the normal level of serum calcium is taken as 9.6–10.6 mg.% for the lower and upper 10%, and between 9.0–11.4 mg.% for the lower and upper 1% respectively.[2] I wish to assure him that I had in fact screened my 85 patients for this disease, but I would need more evidence than he seems to accept before undertaking exploration for parathyroid tumour.

With regard to the efficacy of the calcium/creatinine ratio as a screening test for disordered calcium metabolism, Dr. McGeown allows that by 24-hour calcium excretion studies I have shown all patients exhibiting a calcium/creatinine ratio above 0.3 to have hypercalciuria. My results (Table II) also show that where the ratio is below 0.3 hypercalciuria was not present. In addition to the results of Table II of my article, five further cases where the calcium/creatinine ratio was below 0.3 were investigated by calcium infusion and no hypercalciuria was found.

Regarding the other point of Dr. McGeown's letter about the increased serum alkaline phosphatase, I must concede my error in stating that in all 85 patients this value was within normal limits. In seven patients the results were higher than the accepted upper limit of normality. I feel, however, that only in one case (value 20.2 units) was the value raised above possible experimental error. In this case, and in two others, bone biopsy and *x*-rays revealed no abnormality. The transposition of the headings of Table III was purely a printing error which has been rectified by the Editor.

This interesting group of patients is certainly going to have further study, and this is being carried out in the department of surgery at Hammersmith Hospital.—I am, etc.,

London, W.12. G. L. MOUZAS.

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### Complications of Pertussis Immunization

SIR,—I should like to report a case which may well be a pertussis immunization reaction.

Last August I gave a 6-months-old normal female infant a first dose of triple antigen. Within three to four hours I was called urgently back to find the child limp, cyanosed and dusky, and in a very grave state. The child had been on its back and vomited. I provisionally diagnosed vomit inhalation and admitted the patient to hospital. The child recovered and was discharged with a diagnosis of convulsions. The hospital could not substantiate any inhalation of vomit. The hospital registrar regarded the episode as coincidental to the pertussis injection, but I did not give the baby a second dose. There has been no further convulsion.

In view of the letters from Dr. John N. H. Andrews (*Journal*, August 9, p. 385) and Dr. Guy Bousfield (*Journal*, August 2, p. 329) it is interesting to note that the mother was group O Rh positive; the mother's sister died in her twenties of asthma; and the father has a sensitivity dermatitis.—I am, etc.,

Wantage, Berks. D. LEIGH.

### Depressive States

SIR,—On clinical grounds I find it hard to agree with Dr. Gerald Garmany's conclusion (*Journal*, August 9, p. 341) that the distinction between endogenous, reactive, and involutional depressions is unreal. Clinically these diseases are very different. Thus endogenous and involutional depressions are psychoses, while reactive depression is certainly not psychotic, and depression associated with anxiety-hysteria is, of course, neurotic. In the psychotic depression insight is usually defective, so that patients more often than not deny that they are depressed. This is one of the main distinguishing features, in my view, between the neurotic and psychotic depressions. In the psychotic depression *apathy* is a better description of the mood than depression. Furthermore, the tendency to feel unworthy, to self-blame, to look upon the whole reaction as a justified punishment for past misdeeds is quite characteristic of the psychotic reaction, and is never present in the neurotic or reactive depression

I could not agree at all with Dr. Garmany's view that the difference between these depressions is only a matter of the severity of the illness. He suggests that reactive depressions are mild forms, and endogenous and involutional depressions are severer forms of the same illness. It is quite possible—in fact it is quite common—to find a *mild* psychotic depression. The patient hardly seems depressed at all. The only symptom may be hypochondriasis—particularly concerning the bowel. The logic-proof tenacity with which the patient holds to his belief amounts to a delusion. On the other hand, a severe reactive depression never shows delusions. The retardation of the endogenous depression is in marked contrast to the hyperactive, agitated state found in the involutional depression, while neither agitation nor retardation are found in reactive depressions.

One might compare the various forms of depression with the different manifestations of an organic disease such as nephritis. It is true that acute, subacute, and chronic nephritis (to use the older terminology) are all diseases of the kidney. But they have a different aetiology, a different

clinical picture, a different course, pathology, and treatment. In fact they are very different diseases. In my view precisely the same is true of the depressive states.—I am, etc.,

London, W.1. S. BOCKNER.

### Mole Self-grip Wrench

SIR,—The article by Mr. D. S. Murray (*Journal*, August 16, p. 427) prompts me to report an alternative use of Mole self-grip wrenches. For a number of years I have used the method shown in the illustration to extract hip nails. A variation of the method is to hook a Küntscher nail extractor to the Mole clamped on to the nail, which makes the use of a second Mole unnecessary.

In my experience this is the simplest method of extracting Trifin nails and the only method for removing Model III McLaughlin nails where the hole inside the head of the nail is occupied by a broken bolt.—I am, etc.,

Sidcup, Kent. A. C. BINGOLD.

### Sweet Tooth and Decay

SIR,—I feel that reading your leading article on dental caries (*Journal*, August 2, p. 293) should lead us to evaluate the necessity for the continual distribution of welfare foods in this country.

I doubt whether any expectant mother or child in my practice has taken its full quota of these in the past three years, and in particular the infants have had but little of them. The older children certainly consume orange juice, for gustatory reasons, but most infants reject cod-liver oil on the same grounds.

My feeling is that the infants, if not their mothers as well, no longer need these additional vitamins, and I must admit it was the mothers who began the change in my opinion. The generally rising standard of living and much earlier mixed feeding have so greatly changed the food offered to children in their early months that the advice of 10 and certainly of 19 years ago must be considered out of date in an urban practice in middle England. In the light of your leading article, should we not consider whether we may not be actually threatening harm instead ?—I am, etc.,

Wolverhampton, Staffs. EDWARD PRINGLE.

SIR,—Your leading article "Sweet Tooth and Decay" (*Journal*, August 2, p. 293) reiterates something that most of us were told by our mothers. But is it true ? I have been practising for some years in Jamaica—where the cultivation of sugar is widespread—and can testify that magnificent sets of teeth are commonplace among those children and adults with a sweet tooth who make a practice of chewing sugar-cane. Although I know of no scientific investigation into this matter, it is a common and strong clinical impression among many Jamaican doctors and dentists that chewing sugar-cane and good teeth go together. It would be interesting to hear the views of those in other sugar-producing countries.—I am, etc.,

Jamaica. F. T. RANSON

### Prevention of Lung Cancer

SIR,—The suggestion by Dr. B. J. Bouché (*Journal*, July 12, p. 106) to the effect that a recommendation to prevent the major part of the present epidemic of lung cancer by stopping the smoking of tobacco would be outside the scope of the Medical Research Council is unfounded. "The [Medical Research] Council, by its constitution, has full liberty to pursue an independent scientific policy. . . . The programme [of research work undertaken by the Council] . . . includes . . . clinical and laboratory studies of disease : its nature and causes, and methods for its prevention. . . ."

I assure Dr. A. C. Woodmansey (*Journal*, July 5, p. 46) that my scheme for curing the nation's smoking in months was put forward seriously. He describes it as unrealistic. But what is there unrealistic about urging on the Government a (real) anti-smoking campaign followed by legislation aimed at doing away with tobacco-smoking ? We prevent the smoking of other drugs, notably opium and hashish, so why not tobacco ? Dr. Woodmansey does not believe in deliberately frightening people. Nor do I, unnecessarily. But many smokers are so inaccessible to reason where their drug is concerned that the only hope of cure lies in scaring them (if you can !) sufficiently to break down their inaccessibility.—I am, etc.,

LENNOX JOHNSTON,
President, National Society of Non-Smokers.

REFERENCE

[1] Central Office of Information. Reference Pamphlet No. 20: *Health Services of Britain*, 1957, p. 43. H.M.S.O., London.

### Arresting an Outbreak of Poliomyelitis

SIR,—I read Dr. W. Ritchie Russell's letter (*Journal*, August 2, p. 325) about the article by Dr. H. Koprowski *et al.* on the mass use of live attenuated polio vaccine in the Belgian Congo (*Journal*, July 26, p. 187) before I read the original article. Dr. Russell "hailed" the trial as of "great importance." He stated that it had long been thought that feeding a community with attenuated strains of polio viruses would "not only provide good protection but would arrest an epidemic safely, cheaply, and promptly," and went on to say that "this is apparently what has been achieved in the Belgian Congo." Dr. Ritchie Russell concluded that "this triumph must have important influences on the research programmes and vaccination policies of many countries."

When, however, I immediately turned to the article concerned, I could find none of this. The authors make no claim to have arrested the outbreak with oral vaccine, and there is much that is disquieting in the fact that the epidemic occurred in close time and geographical relation to a trial of oral vaccine which preceded it. A word of warning would therefore seem necessary lest others are also misled into believing that oral vaccines against poliomyelitis might shortly become a practical and safe public health measure.

The established objection to using oral attenuated viruses is that none of them is really non-pathogenic (see the authors' own comment on this) ; that they are known to increase their pathogenicity with passage through their human hosts ; and that they are so readily transmitted from the recipient to his contacts that it is quite impossible, without extraordinary isolation precautions, to prevent their escaping into the surrounding community and so, probably with increasing pathogenicity, to neighbouring communities where they might cause an outbreak. There is nothing in this paper to overrule this objection, which has hitherto been largely theoretical, and a certain amount to arouse our anxiety. Briefly, this is what the authors report.

(1) A colony of chimpanzees was established in Lindi, Stanleyville, in the Belgian Congo for the evaluation of attenuated strains of poliovirus. The caretakers of the animal colony were vaccinated with attenuated virus to protect them against possible exposure to the virulent poliovirus used for challenge of vaccinated chimpanzees. The successful outcome of the programme

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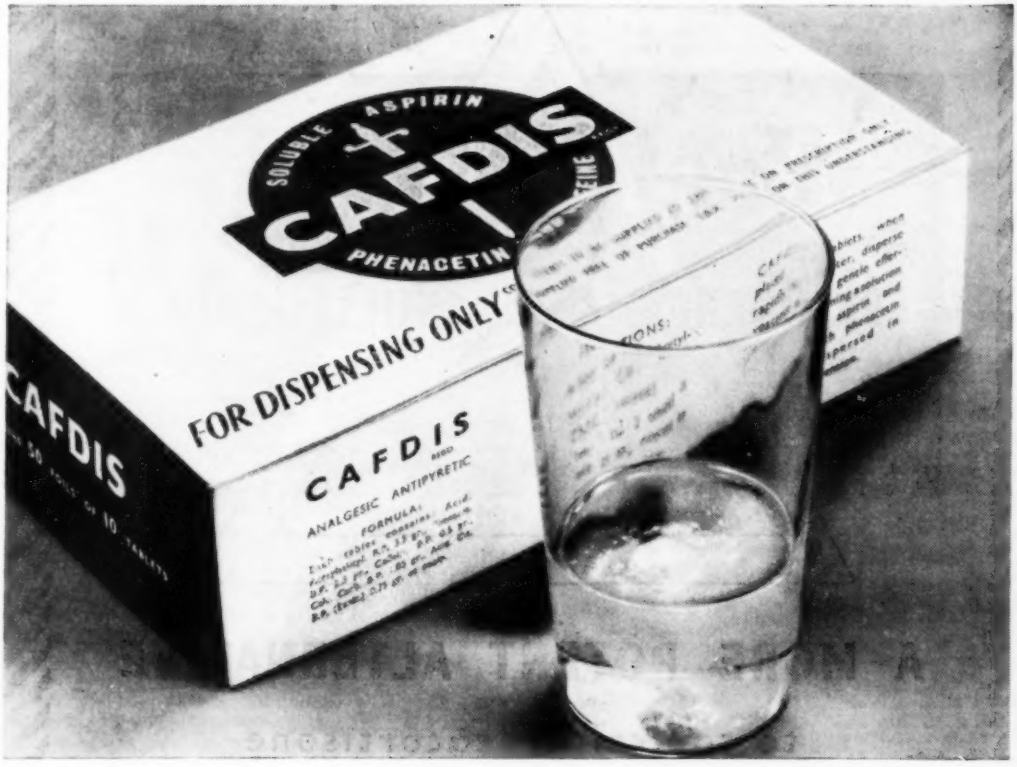


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*J. Amer. med. Ass. 1956, 162, 1381.*

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for immunization of the caretakers prompted the authors to undertake clinical trials on a much larger scale than had been attempted so far. 4,228 of the local inhabitants of Stanleyville were given oral vaccine (types I and III) during the 12 months February, 1957, to January, 1958. 1,978 children in Aketi to the north and west of Stanleyville were also given oral vaccine at some unspecified time. No untoward effects were observed in these two towns. (2) In November, 1957, Banalia, a community with 4,182 inhabitants lying between Stanleyville and Aketi, had a severe outbreak of poliomyelitis, with eight paralytic cases in children under 5 (1% of the children in this age group). Then, three weeks after the last case in Banalia, three communities to its north and east suffered similarly. Gombari, with only 3,482 inhabitants, had 12 cases; Watsa, with 12,789 inhabitants, had two; and Bambesa, with 2,350 inhabitants, had seven. This is a very high incidence indeed, and one would like to have more information on the incidence of the disease in this area previously and in neighbouring areas at the same time to feel that the epidemic was in fact unrelated to the large quantities of poliovirus which had been fed into these communities' neighbours. (3) Finally, as regards the oral virus stopping these epidemics once they had started, the vaccine was fed to "every inhabitant" of these four communities after this high incidence of cases had occurred. No new paralytic cases occurred following vaccination. It is a nice point whether it was the epidemic which had already hit them so severely, suggesting a very high dispersal of virus, or the oral vaccine administered subsequently which immunized the population. Certainly there is nothing unusual in the fact that the outbreaks ceased when they did, particularly in populations with such high natural immunity.

The authors make no claims in their paper, which is a factual report of great value in a matter of considerable importance and raising a number of problems, both epidemiological and ethical. There will no doubt be more information on these outbreaks later, but until something more reassuring is added it would surely be safer to regard the facts as a warning than as a "triumph." An outbreak of 140 *paralytic* cases per 100,000 population, which was recorded in these communities, is a high incidence indeed, particularly in a community which preliminary surveys had shown to have about 88% "natural" immunity against type I virus believed to be responsible. Among other things one must know the incidence of the disease in previous years in the same area and in similar communities further from Stanleyville before one can be happy about the facts published in this paper.—I am, etc.,

Oxford. MARGARET AGERHOLM.

## Allergic Response to Hyaluronidase

SIR,—A recently encountered case of hypersensitivity to hyaluronidase may be of interest, as there seems to be little knowledge of such a possibility despite previous reports in your journal and elsewhere.[1 2 3 4]

A coal merchant, aged 31, with no previous allergic history attended the casualty department on June 16 with a splinter deeply embedded beneath the nail of his left middle finger. The splinter was removed, together with an overlying wedge of nail, using a ring-block of 2% lignocaine with 1,500 units of hyaluronidase. A few minutes after leaving hospital his eyes began to smart, then to close, and he felt "prickly" all over. One hour later he returned, and on examination both eyes were practically closed, he had intense generalized urticaria, and there was pitting oedema of the dorsum of his left hand. 1 ml. of solution of adrenaline (1 : 1,000) was given immediately by subcutaneous injection, and followed by 10 mg. "piriton" (chlorpheniramine maleate) intramuscularly. This was followed by immediate subjective relief and rapid fading of his erythema. Later, however, he fainted twice and his temperature rose to 100° F. (37.8° C.). He was given a tablet (4 mg.) of piriton that night and again in the morning, when he was much better but still had a pyrexia of 99° F. (37.2° C.). On the following day he was discharged, perfectly well. Subsequently, scratch tests were performed on the skin using dilute solutions of lignocaine (1:100,000, 1:10,000, and 1 : 1,000) and hyaluronidase (1.5, 15, and 150 units per ml.). Positive reactions (localized weal formation) were given only by the two stronger solutions of hyaluronidase. Thus the patient was sensitive to hyaluronidase.

Dr. P. Hume Kendall (*Journal*, June 15, 1957, p. 1419), in reviewing 4,800 injections of hyaluronidase at Guy's Hospital, encountered five cases of allergic side-effects, an incidence of 0.1% (but does not state whether he confirmed hyaluronidase as the allergen by intradermal testing). It is possible that some cases may not be recognized for what they are owing to the coincident administration of more common potential allergens such as A.T.S. or penicillin.—I am, etc.,

Surbiton, Surrey. B. A. LATHAM.

REFERENCES


1 Criep, Leo H., and Tafel, Ralph E., *Amer. J. Obstet. Gynec.*, 1949, **58**, 188.
2 Joubert, P. J., *Brit. med. J.*, 1957, **1**, 46.
3 Barboc, Kathleen, ibid., 1957, **1**, 166.
4 Hume Kendall, P., ibid., 1957, **1**, 1419.


## Suppurative Arthritis Complicating Rheumatoid Arthritis

SIR,—The article by Professor J. H. Kellgren and his colleagues (*Journal*, May 24, p. 1193) describing suppuration in joints and other sites in patients suffering from rheumatoid arthritis, and the warning contained in Dr. Malcolm Thompson's letter (*Journal*, August 16, p. 451) prompt me to record the following case.

A storekeeper, aged 56 years, who had suffered from rheumatoid arthritis for seven and a half years, was seen on February 7, 1956, at a routine follow-up clinic. He had been off work for two weeks because of a septic toe, the results of his own attempts at chiropody. There was clinical evidence of moderately active rheumatoid arthritis affecting the small joints of both hands and feet. In addition both elbows were swollen and tender, with considerable limitation of movement. These findings had been noted at routine examinations during the previous six years. The patient was asked to attend for injection of the elbows with hydrocortisone on February 16. On this occasion a small amount of hazy straw-coloured fluid was obtained on aspiration of the right elbow prior to the injection of 25 mg. of compound F. Frank pus was aspirated from the left elbow and steroid was not injected. The pus yielded a growth of coagulase-positive *Staphylococcus aureus* on culture.

In this patient, infection of the joint was not accompanied by constitutional signs, such as fever or malaise. The local clinical findings were compatible with rheumatoid arthritis of moderate activity affecting the elbows. The case further illustrates the point made by Dr. Thompson—namely, the importance of aspiration prior to the injection of a steroid preparation.

There is a danger that isolated case reports such as these may direct undue attention to what is a relatively uncommon complication of rheumatoid arthritis, which has been encountered only twice by the writer in the course of many hundreds of injections into joints over a period of ten years. Nevertheless, the possibility must be borne in mind in view of the danger of local or systemic administration of steroids in the presence of infection. I am indebted to Dr. J. J. R. Duthie, under whose charge the patient was admitted, for permission to quote this case.—I am, etc.,

Edinburgh, 3. JAMES D. E. KNOX.

## Electrified

SIR,—I was interested to read in your issue of August 9 (p. 390) that Mr. L. H. Pimm experienced an electric shock from a patient. A few years ago I was examining schoolchildren one cold and frosty November day. The room had a bare wooden floor and a large fire was burning, making the atmosphere very dry, and I was wearing rubber-soled shoes. I found that, if I touched the chin of a child with my finger-tips in order to tilt the head back, I would receive quite a sharp electric shock, and in several cases so strong as to make me involuntarily withdraw my hand. As the children's age group was about 10 years I did not feel like asking them if they, too, had felt a shock. They did not appear to notice anything unusual, and, if they did, probably took it as part of the medical ritual. I have had no similar experience since, but I do seem to be particularly prone to shocks from the static electricity on cars.—I am, etc.,

Gatley, Cheshire. AITOLIA ENGLISH.

### Zoster Sine Herpete

SIR,—Dr. G. W. Lewis's comprehensive and important article on zoster sine herpete (*Journal*, August 16, p. 418) prompts me to record two out of a number of cases in support of his contention that this is a commoner condition than has been realized.

During an epidemic of varicella in the late spring of this year a married woman of 35 years was awakened in the early hours with severe nausea and vertigo. She staggered to a wash-basin, but did not vomit. The attack passed off within the hour and next day the symptoms did not reappear, though she felt lethargic. The following night the episode was repeated and it was with difficulty that her husband got her back to bed, so severe was the vertigo. The next day mild nausea and a very slight vertigo were present during the day and she developed a fairly severe right otalgia. The drum was normal; she had no deafness, nor tinnitus. A coarse nystagmus could be elicited. The otalgia slowly diminished, lasting five days altogether. The nausea and vertigo disappeared after ten days. On the fourth day after the start of the otalgia, two small vesicles of herpetic type appeared above the right pinna.

The second case had a moral attached. A medical student was "sitting in" with me at a consultation period. I had said how important it was to examine fully any cases where examination might be helpful, when a woman came in with a history of sudden severe pain of sciatic distribution after moving a piano. I sent her to the examination room with instructions to disrobe from the waist downwards. When we came to her she had omitted to remove her stockings. On my request she removed them with ill grace and an "Is-it-really-necessary?" expression. To our surprise and my delight we saw a group of herpetic vesicles on the outer side of the great toe extending on to the nearby dorsum of the foot. She had no further outcrop and the diagnosis might easily have been missed.

These two cases are not "sine herpete" but "cum herpete minimo," and show that zoster may produce so few vesicles that they may be overlooked.—I am, etc.,

Leeds, 8. R. A. MURRAY SCOTT.

### Jack Sprat

SIR,—Dr. S. Levin's suggestion about the possible metabolic background to the dietetic difficulties of Mr. Sprat (*Journal*, August 23, p. 503) is certainly original; unfortunately he says nothing about Mrs. Sprat's troubles. Be this as it may, it may interest people to know that according to my family tradition in Norfolk Mr. and Mrs. Jack Sprat were real people: they lived at Hethersett, a village just south of Norwich, in the early part of the eighteenth century. That knowledge of the Sprats became widely known is easy to understand when it is remembered that Hethersett was on the old road from Norwich to London via Braintree, a busy route originally popularized by the silk merchants.

It is curious to reflect that, while most nursery rhymes have a factual origin and perpetuate important events in our national life, no additions to the collection seem to have been made for a couple of hundred years or so.—I am, etc.,

London, W.1. W. R. THROWER.

### Informing the Hospital

SIR,—Very often patients come into hospital with boxes of tablets, which they say their G.P.s have been giving them for a long time, the name of which is unknown to them. This means that the house-physician or house-surgeon has to find out from the G.P. the name of the drug, and this is time-consuming and also results in delay in treating the patient. Sometimes patients describe the colour or taste of a drug which they say they have been taking, and if something different is given to them quite often they grumble, and it produces a difficult situation between the outside practitioner and the hospital resident doctor.

I think it would be a better arrangement if the private practitioner could inform the hospital doctor of the chronic illnesses of the patients they send in with some different acute condition—for example, appendicitis with chronic heart failure or epilepsy, or disseminated sclerosis—and the treatment they are on. The house-physician or house-surgeon always has to make his own diagnosis about the present ailment, but it is humanly impossible for him to find out the name of the tablets patients have been on previously or to make a correct judgment about their past illness, which may be of great value in the treatment of the present condition—especially where anaesthesia and operative measures have to be considered.

Therefore I would like, through your *Journal*, to urge that in future G.P.s should inform hospital practitioners about the past history of their patients and the treatment they are on, and I am sure this would be a great help for the inexperienced junior members of the medical world like myself.—I am, etc.,

St. Albans, Herts. BISWARUP BHATTACHARYA.

### Coudé Catheter

SIR,—The scene is a surgical ward of the London Hospital in the early twenties. Russell Howard is taking a teaching round, and is on the warpath.

RUSSELL HOWARD: "What is the name of this catheter, you?"

STUDENT: "A coudé, Sir."

RUSSELL HOWARD: "Why is it called coudé?"

STUDENT: "After a French surgeon, Sir."

RUSSELL HOWARD (with the well-known leer): "Yes, and I suppose his brother Bi Coudé invented the other one."

Collapse of student.

Mr. Hamilton Bailey (*Journal*, August 23, p. 513) must have missed this particular round.—I am, etc.,

London, S.E.10. STEPHEN POWER.

SIR,—When I was a medical student in Johannesburg thirty years ago the following anecdote was currently popular. The scene was an oral examination in surgery.

EXAMINER: "And what, Mr. Blank, is this?"

CANDIDATE: "A coudé catheter, Sir."

EXAMINER: "And why, Mr. Blank, is it so called?"

CANDIDATE: "After the eminent French surgeon M. Coudé, Sir."

EXAMINER (producing a second instrument): "And this one, I presume, Mr. Blank, after the even more distinguished French surgeon, M. Bicoudé?"

What a lot of red faces there ought to be about! But what a brilliantly successful leg-haul!—I am, etc.,

Devonport. C. H. JOYNT.

## POINTS FROM LETTERS

**Radiation and Childhood Malignancies**

Dr. JOHN D. ABBATT (Meopham Green, Kent) writes: Your leading article on this subject (*Journal*, July 12, p. 96) was lengthy and uninformative. In this article you rightly say that the full results of the Oxford investigation[1] have been awaited with special interest; this is self-evident in view of the anxiety aroused by the initial report. In your leader, apart from recapitulating some of the more important radiological features in the report, little else was said. No editorial assessment of the value of the investigations nor of the practical significance of the findings was attempted. This is particularly unhelpful. Your very understandable desire to avoid being wrong has, I believe, led you in this instance and on this topic to publish a masterpiece of "fence squatting."

REFERENCE

[1] Stewart, A., Webb, J., and Hewitt, D., *Brit. med. J.*, 1958, **1**, 1495.

**Treatment of Boils**

Dr. ALLENE SCOTT (London) writes: Allow me to say that I agree entirely with Dr. G. N. Marsh (*Journal*, August 16, p. 451) that treatment with expensive antibiotics is not routinely indicated for boils. As our observations showed (*Journal*, July 12, p. 83), minor grades of boil are unaffected, and, as Dr. Marsh says, penicillin is likely to be effective for the majority of more severe ones. We chose this type of staphylococcal infection for a therapeutic study only because plenty of cases are available and the progress of the lesion can be closely watched, in the hope that the lessons learned might be applicable in other directions.

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AM. JOUR. PSYCHIAT. (JAN. 1958) have shown that

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REFERENCES

Science, **126**, 3274, 610-611 (1957)

Am. Jour. Psychiat., **114**, 655-656 (Jan. 1958)

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# Obituary

## C. C. UNGLEY, M.D., F.R.C.P.

Dr. C. C. Ungley, physician to the Royal Victoria Infirmary, Newcastle upon Tyne, and well known for his work on the treatment of pernicious anaemia and subacute combined degeneration of the cord, died at his home in Newcastle on August 21. He was 56.

Charles Cady Ungley was born on July 14, 1902. At the University of Durham, where he studied medicine, he soon made his mark as a man who would distinguish himself in his chosen profession. Winning the Turnbull and Outterson Wood prizes and the Tulloch, Gibb, Dickenson, and Philipson scholarships, he graduated M.B., B.S., with honours, in 1925, and proceeded M.D. two years later. After resident posts at the Royal Victoria Infirmary he took the M.R.C.P. and was appointed medical registrar at the Infirmary in 1928. At that time he was particularly interested in neurology, and his first paper on subacute combined degeneration was published in *Brain* in 1929. Soon afterwards he was awarded a Rockefeller medical fellowship and he became research fellow in medicine at Harvard University and at the Massachusetts General Hospital, Boston. By this time he had turned his attention to the treatment of pernicious anaemia and published several papers on the subject in the *Quarterly Journal of Medicine*. Having returned to Newcastle he was appointed assistant physician at the Royal Victoria Infirmary in 1935 and full physician in 1947. Elected a Fellow of the Royal College of Physicians in 1937, he was previously a Leverhulme research scholar of the College, and in 1938 he gave the Goulstonian Lecture on "Some Deficiencies of Nutrition and their Relation to Disease."

Ungley was no cloistered research worker, but a clinician interested in all aspects of medicine. For several years he was honorary secretary of the Newcastle and Northern Counties Medical Society, and he was a member of the R.N.V.R. from the time he qualified. During the second world war he served as a surgeon commander and did some notable work to improve the chances of survival of the shipwrecked. After the war he and his colleagues continued to make many valuable contributions to clinical haematology, several of his papers being published in this *Journal*.

Dr. Ungley is survived by his wife, one son, and two daughters.

We are indebted to Professor F. J. NATTRASS for the following appreciation: The death of Charles Ungley removes a distinguished figure from British medicine. Though he was working to the last he had been dogged by ill-health intermittently for the past fifteen years. This first appeared when he was stationed in South Africa during the war as a medical officer in the Royal Navy, an acute infection leading to the discovery of marked hypertension. From time to time since then his work has been interrupted by symptoms related directly or indirectly to this condition.

Ungley's very active life divides itself naturally into three periods—before, during, and after the second world war. His first and still perhaps most important work was on subacute combined degeneration of the spinal cord, and was carried out initially in conjunction with M. M. Suzman. It was thought at first that Minot and Murphy's discovery of the liver treatment of pernicious anaemia was not applicable to the associated nervous disorder, but these workers showed that with greatly increased doses of whole liver the disease could frequently be cured or arrested. To show this Ungley and his colleague examined and followed up virtually all the cases of subacute combined degeneration in the north-east of England, carrying out the work with scrupulous clinical accuracy. The tremendous advances which have followed the discovery of the liver treatment have not solved the fundamental problem of the relationship of the blood and spinal-cord changes. But this discovery was the main stimulus of modern haematology, and to continuing research in this field Ungley devoted the rest of his life in conjunction with general clinical work and teaching. When Castle put forward his hypothesis Ungley became greatly interested in the nature of the "extrinsic factor" and carried out much experimental work on this subject. He was also intrigued by the haematopoietic responses which could be obtained by yeast extracts, and carried out many clinical trials with such preparations. This early work deserves very great credit, for it was done in scanty accommodation and with few facilities.

A keen member of the R.N.V.R., Ungley was called up for service and in due course was stationed at the Royal Naval Hospital at Kingseat, near Aberdeen. His energy and initiative quickly directed his attention to urgent Service problems, and his work in two directions was of a character undoubtedly historic—namely, on survival at sea of shipwrecked men and on the particular problem of such men which he named "immersion foot." Though, owing to his health, publication of his work on the general problems of survival was long delayed, his official report, in conjunction with McCance, Crosfill, and Widdowson, is of first-class importance. One contemporary problem with which it deals decisively is the grave danger of the drinking of sea-water. The distressing "immersion foot" he studied in detail, investigating its circulatory and neurological manifestations, its management, and its aetiology, including its differences from frost-bite and other conditions.

The post-war period found him at work again among the complexities of research on pernicious anaemia. One of the most rewarding of his investigations was a series of clinical trials which were carried out with purified liver extracts prepared by Lester Smith and his colleagues of the Glaxo Laboratories. This time-consuming method was the only one then available for assaying the potency of haematopoietic material. These trials helped very substantially towards the purification of liver extracts and the eventual crystallization of vitamin $B_{12}$. He was also very much concerned during this period with experimental work on the nature of "intrinsic factor." His interests, however, were not limited to investigation of classical pernicious anaemia, for he wrote many papers on related megaloblastic anaemias such as pernicious anaemia of pregnancy and anaemias associated with disease of the small intestine.

Ungley's work showed well the indivisibility of medicine, for he was as good a neurologist as haematologist and also taught and practised effectively in other branches of medicine. He was very keen on undergraduate teaching and was never happier than when teaching the elements of the art in the wards. He was the first physician in his hospital to arrange—irregularly!—for his clinical clerks to obtain periods of experience in general practice, and he picked the doctors carefully. When the National Health Service came in he chose a whole-time contract in order to give all his time to hospital and research, but formerly he was in consulting practice.

Ungley's knowledge of nutritional disorders and of pernicious anaemia was extraordinarily extensive and was always at the disposal of anyone interested in such problems. He did not find writing easy, and his many lucid scientific papers were produced only after very critical assessment of his results and with much labour. Perhaps his only intellectual hobby was medicine, but he enjoyed golf and rather alarmingly in his latter years became an expert glider. He

enjoyed wonderful holidays with his wife, son, and two daughters. He was a very modest man. He had complete integrity, great kindness, and charitableness to all.

Dr. E. LESTER SMITH writes: The importance of Ungley's pioneer work with vitamin $B_{12}$ has tended to be overshadowed by later exciting developments. It is no exaggeration to say that without his help vitamin $B_{12}$ would not have been isolated by the British team. Although pink concentrates were obtained in 1946, it was believed for some time longer that the colour was due to an adventitious pigment accompanying the active principle. It needed a total of some 80 clinical tests (many of them repeats on the same sample) before the relationship between colour and activity became firmly established, and nearly all these tests were carried out by Dr. Ungley personally. This work was never published in detail; for as soon as the crystalline vitamin became available Ungley devoted all his abounding energy to constructing dose–response relationship for pernicious anaemia cases with different initial red-cell counts, with and without neurological complications. He also tried all possible methods of administration and was the first to demonstrate dramatic remissions with single massive oral doses (3,000 micrograms). Ungley was also one of the first to insist that in the treatment of pernicious anaemia dosage schedules need no longer be restricted to those established for liver extracts, and to recommend the larger doses that have since become routine. He deserves greatly to be remembered for all this original work and for the several excellent reviews of the subject that he compiled.

Dr. ANDREW SMITH writes: Some mention should be made of Dr. Ungley's interest in teaching students and particularly in introducing them to general practice. He started a student–general-practitioner attachment scheme in King's in 1952, long before such schemes became general. He approached four general practitioners (of which I was one) with urban, semi-urban, rural, and small-town practices respectively and persuaded each to take a student for one day each week and show him something of general practice. This scheme differed from most others which have been introduced since in that the student saw different types of practice and different doctors, and he saw general practice at the beginning of his hospital career. This made him realize that patients are people with homes and families, not merely vehicles of disease, and coloured his subsequent dealings with patients in hospital. This scheme, started as an experiment over six years ago, has continued ever since.

## A. MARION HILLIARD, M.D.

Dr. Marion Hilliard, who was well known as a specialist in obstetrics and gynaecology in Toronto and was a vice-president of the Medical Women's International Association, died on July 15.

Anna Marion Hilliard was born in 1902 at Morrisburg, Ontario, the third of a family of five, and was educated at Victoria College, Toronto, and at the University of Toronto, graduating M.D. in 1927. As a student she distinguished herself not only scholastically but also as an athlete. After spending a year in hospitals in London, including the Hospital for Women, Soho, she returned to Toronto, where she established herself as an obstetrician and gynaecologist. She played an important part in the development of the Women's College Hospital in Toronto from a cottage hospital of 75 beds to a modern hospital and teaching unit of the university with 500 beds. A past president of the Canadian Federation of Medical Women and a vice-president of the Medical Women's International Association, Dr. Hilliard was nominated shortly before her death for the office of president of the latter association. She gave up her appointment at the Women's College Hospital only last year, but had planned to continue in private practice for some time to come; and she was looking forward to the opportunities which presidency of the M.W.I.A. would afford her to study conditions in other countries, particularly in India. Generous and warm-hearted by nature, she had provided funds to establish a student scholarship at the Victoria College in memory of her father, and she gave the proceeds from the sale of her book, *A Woman Doctor Looks at Love and Life*, to the Women's College Hospital. By Dr. Hilliard's death Canada has lost one of her most popular women doctors.

## ROBERT RUTHERFORD, O.B.E., T.D., F.R.C.S.

Mr. Robert Rutherford, who was in general practice at Longtown, Cumberland, died suddenly at his home there on August 19. He was 63 years of age.

Robert Rutherford was born in Glasgow on January 23, 1895. As a child he moved with his parents to Carlisle, and was educated at Grosvenor College there. He left an apprenticeship with a chemist to serve with the Black Watch in France in the first world war. Soon after his return to civilian life he became a medical student at King's College Hospital, and qualified M.R.C.S., L.R.C.P. in 1927. Three years later he was admitted F.R.C.S. After qualification he held the appointments of house-surgeon at the Belgrave Hospital for Children and casualty officer, house-surgeon, and surgical registrar at King's College Hospital. From 1930 to 1934 he was clinical director at Hillingdon County Hospital, after which he was in general practice at Longtown. The author of many articles on surgical subjects published in this and other journals, he examined in surgery for the General Nursing Council from 1932 to 1939. As a Territorial officer he was recalled to the R.A.M.C. in 1939 on the outbreak of the second world war, and served throughout. He was officer in charge of the surgical division of the 19th General Hospital in England and Egypt in 1939–40; in command of the 60th British General Hospital in Palestine and India from 1940 to 1942; and officer in charge of the surgical division of the Davyhulme Military Hospital in 1943 and the 110th British General Hospital in Normandy and Belgium in 1944–5. His name was brought to notice in recognition of distinguished services in connexion with operations in the field from March to June, 1940. Three years later he was awarded the Efficiency Decoration of the Territorial Army. In 1946 he was appointed O.B.E. for gallant and distinguished services in North-west Europe, and in the previous year he was mentioned in dispatches. After the war he returned to his practice at Longtown, becoming also medical officer to the Westmorland and Cumberland Yeomanry. He retired from the Territorial Army in 1952 with the rank of colonel. He married Miss Nora Borrett in 1931, and she survives him together with the two sons and three daughters of the marriage.

## JAMES ALEXANDER, M.D.

Dr. James Alexander, who was in general practice at Galston, Ayrshire, for over half a century, died at his home in near-by Darvel on August 12. He was in his 90th year.

James Alexander was born at Waterside, in the parish of Fenwick, Ayrshire, on April 16, 1869, and was educated at Kilmarnock Academy and Glasgow University, where he graduated M.B., C.M. in 1890. Four years later he proceeded to the M.D. After graduation he was in practice at Aberdare, South Wales, and later went to Vienna for postgraduate study before returning to practise in Galston. He remained there for the next fifty-five years, and retired after the introduction of the National Health Service in 1948. A justice of the peace of the county of Ayr, he served as chairman of the Kilmarnock and district licensing court. He had great experience in both town and country practice, and leaves behind him a splendid record of public work and service.

J. S. writes: Dr. James Alexander's death ends, in this part of Ayrshire, the era of medicine which is slowly closing all over the country, when the general practitioner had to

use his skill in many branches of medicine without appeal for specialist help. Dr. Alexander was well fitted for this work. Robust and tall, he gave confidence with his firm manner and quick decisions, so that he built up a practice of grateful and loyal patients. For transport he used in his time, in turn, riding-horse, horse and carriage, and motor-car. Only recently, with failing health, did he lose his quick, energetic stride.

## ANGUS CAMPBELL, *M.C.*, M.B., Ch.B.

Dr. Angus Campbell, who died suddenly on August 11 at the age of 82 while holidaying with his younger brothers at Port Ellen, Isle of Islay, had been for many years in practice at Evenwood, near Bishop Auckland.

Angus Campbell was born on May 27, 1876, and graduated M.B., Ch.B. at Glasgow University in 1902. He began his professional career at Crook, Co. Durham, where he served for some years as assistant to the late Dr. McKay. On leaving there to take an assistantship for a short time in Pontypridd he received an illuminated address from his grateful patients. Throughout the first world war he served as a regimental medical officer in France, was mentioned in dispatches, and awarded the Military Cross. Soon after completing his military service, Campbell bought the farm of Giol in Oa, Isle of Islay, where his father had for many years been a sheep farmer. At this time, too, he settled at Evenwood in practice on his own account. He remained there until he retired at the age of 72, when he went to farm Giol, which had been managed for him by a younger brother. His wife Edith died there in 1955.

H. C. D. writes: A Highlander of retiring disposition, and of a quiet, gentle nature, Campbell had never sought a wide circle of friends, but to those who were privileged to be numbered among his intimates he was a loyal, forthright, and beloved friend. His forty years in Evenwood were devoted to his patients, his only recreation being an occasional hour with the gun and short visits to his beloved Islay. He had a profound knowledge of sheep and of sheep farming. Only a year ago he sold his farm and made his home with his eldest daughter. While it is a disappointment to his friends that he did not live longer to enjoy a well-earned rest, we feel that his sudden painless passing in the island that he loved so well would have been his wish. Dr. Campbell is survived by one son, Dr. Angus Campbell, of Oldham, and by three married daughters, and to them we extend our sincere sympathy.

## W. BARRINGTON PROWSE, F.F.R., M.R.C.S. L.R.C.P.

Dr. W. Barrington Prowse, honorary consulting radiologist to the Royal Sussex County Hospital, Brighton, died at the hospital on August 16 a few weeks after his 88th birthday.

William Barrington Prowse was born on June 18, 1870, the son of Dr. William Prowse, and was educated at Epsom College. Receiving his clinical training at Bristol Royal Infirmary, he qualified M.R.C.S., L.R.C.P. in 1900. After a period of further study in radiotherapy at the London Hospital, he joined his father in general practice at Brighton. A few years later he decided to concentrate his energies on radiology, and in 1906 he set up in practice as one of the early specialists in the subject. A valued supporter of local and national medical organizations, he served as one of the honorary secretaries of the Section of Electrotherapeutics at the Annual Meeting of the British Medical Association held at Brighton in 1913, and he was chairman of the Brighton Division of the Association in 1935–6 and president of the Sussex Branch in 1937–8. He was also a past president of the Brighton and Sussex Medico-Chirurgical Society. A widower since 1951, he is survived by two sons, one of whom, Dr. C. Barrington Prowse, is a consulting physician.

G. W. B. writes: From the beginning of his career Dr. W. Barrington Prowse came to be known as a diagnostician of unusual ability. His opinion was a model of clarity and precision. His reports were always written by his own hand, a practice he never discontinued. From them a doctor would catch the reflection of a man who, though deeply versed in his craft, was also concerned for his patients beyond the narrow limits that craft imposed. During a long and flourishing working life his patients knew him as a man of great warmth and sympathy, and showed their appreciation for his many acts of kindness and consideration. He was responsible for the formation of a department of radiology at the Royal Sussex County Hospital and at Worthing Hospital. His professional life spanned the history of British radiology. Early in the century he was associated with the Roentgen Society and with the British Association for the Advancement of Radiology and Physiotherapy. In 1934 he was a founder member of the British Association of Radiologists, to which body he was elected a Fellow in the following year. The name of the parent body was changed in 1939 to the Faculty of Radiologists, and he was automatically made a Fellow. His private work reflected the development of radiology in general, from the Roentgen-ray equipment he installed at his consulting-rooms in 1906 to the later appearance of radiotherapy as a specialty and the increasing refinements of radiodiagnosis. Outside his work his interests were wide, principally in fishing and golf, and his keenness for swimming made him a familiar figure all the year round at the early morning bathing parade. His passing removes from medical practice in Sussex one of our most respected colleagues, and from the lives of those who knew him a most charming friend.

## J. L. SHELLSHEAR, D.S.O., M.D., M.S.

Professor JOHN KIRK writes: I would like to express my grateful appreciation of the tributes to Professor J. L. Shellshear by two of his friends published in the *Journal* of August 16 (p. 453) and August 23 (p. 517). They have vividly recalled to me many happy memories of him in Hong Kong more than thirty years ago. In those days occasional visits to the Colony were a delightful experience for those of us whose work lay in the Chinese hinterland, especially because of the warm welcome which we knew was always waiting for us in the homes of our friends. In the medical school of the University of Hong Kong at that time were four great-hearted gentlemen who stood out pre-eminently and inevitably because of their valued contributions to medical education in the Far East. Joseph Shellshear occupied the chair of anatomy, H. G. Earle the chair of physiology, John Anderson the chair of medicine, and Kenelm Digby the chair of surgery. They were indeed a noteworthy quartet and the university was fortunate to have men of such character and ability to pass on to the eager Chinese students not only the best of Western medicine, but also those high ideals of life and service which were typical of each of those eminent teachers. "Joe" Shellshear was the last survivor of that wonderful group, to whose friendship I owed so much. Like his three valiant colleagues, he now rests from his labours and his works do follow him.

## CORRIE HUDSON, C.B., C.I.E., D.S.O., F.R.C.S.Ed.

Lieutenant-Colonel H. R. B. GIBSON, I.M.S. (retired), writes: It has been suggested to me that I might make known incidents in the varied life of Major-General Corrie Hudson, of whom an obituary notice appeared recently in the *B.M.J.* (August 9, p. 392). In Bombay on February 12, 1914, Corrie Hudson had but recently returned from the 2nd Balkan War and that night he told me of his experiences there. He was at home on leave when he heard that Sir Frederick Treves was raising a British Red Cross ambulance to go to the Balkans. "C. H." got an interview with Sir Frederick, and on explaining the reason of his visit Sir Frederick smiled

and opened a drawer of his desk, showing that it was full of applications. Corrie Hudson, not a bit perturbed, asked, "How many of these applicants have commanded a field ambulance on active service?" Sir Frederick replied, "None. Have you?" "Yes," said Corrie. "That makes a difference," Sir Frederick said. "What position are you prepared to hold?" Corrie replied, "Either I command it or nothing." He got command. On the eve of his departure from the Balkans he was given a farewell dinner. He was shaking hands with the officers, when one said, "Not good-bye: au revoir. We shall meet in Berlin." At this the other officers laughed, and Corrie, seeing that there was something behind the remark, asked for an explanation. After an incredulous, "Don't you know?" the explanation was given, "Austria will declare war against Serbia, Germany will go with Austria. Against Germany and Austria will be Italy, France, Britain, Belgium, Holland, and Denmark. It is not good-bye but au revoir. We shall meet in Berlin." C. H. was greatly impressed, and on his return to London went to various departments of the War Office and attempted to impress them with the story. Eventually he got an interview with Sir Edward Grey, but there too he did not seem to have any success.

### H. A. SANDIFORD, *M.C.*, M.B., D.P.H.

The obituary of Brigadier H. A. Sandiford was printed in the *Journal* of August 23 (p. 513).

Dr. J. G. HUNTER, General Secretary of the Federal Council of the British Medical Association in Australia, writes: We here in Australia were grieved to learn of the death of Brigadier H. A. Sandiford. "Sandy," to all who knew him well, with his quizzical smile, warm welcome, and charm of manner, was a friend indeed to all overseas members visiting London, and the Commonwealth Medical Advisory Bureau is a monument to his enthusiasm to industry. I have the happiest of recollections of my association with Sandy during several visits to London, and on behalf of the Association in Australia I would like to pay tribute to the great work he did as director of the Bureau, and to extend deepest sympathy to his widow, son, and two daughters.

J. L. G. writes: I am one of those who have been deeply interested in the Commonwealth Medical Advisory Bureau since, and even before, its inception, and I would like to add my quota of admiration for the great work which Sandiford performed, and of sorrow at his death. His energy and organizing ability and, above all, his kindliness of heart combined to create an instrument more efficient than even the most sanguine of us could have hoped. Scores of letters from overseas testify to the aid which he so cheerfully gave to visitors who might otherwise have remained friendless. The Bureau will be a lasting memorial to the man whose work as its first director must have helped in no small degree to strengthen the links between Britain and the other members of the Commonwealth.

## Universities and Colleges

### SOCIETY OF APOTHECARIES OF LONDON

The following candidates, having completed the final examination, have been granted the diploma of L.M.S.S.A.:

D. H. Perkins, J. R. Carling, M. C. Liu, I. H. Bailes, R. J. Priddy, J. R. Johnson, R. N. Brain, S. K. C. R. Villayarayan, M. A. Saber, E. M. Blenkinsop, P. W. F. Chan, N. Mustapha, J. A. Saunders, D. F. Fergie-Woods, M. T. Haslam, H. Hunt, E. McIlwaine, P. Nour-Eldin, J. F. Rivers, M. Budd, L. B. Cannell, A. J. Casson, M. A. Gibson, A. M. Hazell, R. G. Hornung, J. G. Williams.

P. R. Sathyanadhan was awarded the Diploma in Mastery of Midwifery and F. de S. Donnan, G. F. Smith, and W. O. Thompson the Diploma in Industrial Health.

## Medico-Legal

### FATAL AGRANULOCYTOSIS AFTER "NOVALGIN"

[FROM A HAEMATOLOGIST]

In 1945 a healthy man aged 45 was seriously injured in a road accident. After 17 weeks in hospital he was discharged with residual pain for which was prescribed "novalgin," an amidopyrine derivative, 5 gr. (320 mg.), and phenobarbitone, ½ gr. (32 mg.), every night. All attempts to wean him from this combination failed, so that in the last 12 years he must have consumed some 1.5 kg. of novalgin and 150 g. of phenobarbitone.

In August, 1957, he had a chill and developed an inflamed mouth, diagnosed as thrush, from which he recovered completely. On January 30, 1958, he was found to have a second attack with bleeding from the gums and a haemorrhagic rash on thighs and arms. This time he did not respond to treatment and was admitted to hospital on February 6 with severe ulceration of the mouth, palate, and pharynx, generalized purpura, and bilateral basal pneumonia. A blood count showed virtually no leucocytes. His mouth swabs yielded profuse growths of monilia, streptococci, and haemophili. He died 55 hours later; necropsy confirmed the clinical findings. At the inquest the coroner recorded an open verdict, considering that the drug novalgin was responsible for the man's death (*East Anglian Daily Times*, March 13).

#### Comment

There seems no reason for doubting that the novalgin caused this man's death. It is a derivative of amidopyrine and no less dangerous. The makers have withdrawn their brand of amidopyrine from the British market, and do not advertise novalgin; but they still distribute it because there are a few people who seem to obtain relief from pain with no other analgesic drug. It was the manufacturers themselves who asked that novalgin should be placed on the Schedule of Poisons, and this was done in 1952.

This is the classical story of agranulocytosis as caused by amidopyrine and its derivatives. There is no reliable information about the frequency of this complication with these drugs, but estimates of up to 1% have been published.[1] It is now believed that agranulocytosis results from a sensitization process in which an antibody is formed to the leucocyte–drug complex; in the presence of the drug the leucocytes are agglutinated and filtered off in the lungs. If the drug is stopped, the bone marrow soon repairs the deficit, but if it is continued the bone marrow liberates ever younger cells, and ultimately all recognizable granulocyte precursors are destroyed.[2] In such cases recovery is unusual.

There are many drugs which may cause agranulocytosis, but only four groups are of much importance: first and most dangerous, because more potent than the others, amidopyrine and novalgin, still used in a few cases as analgesics, especially in combination with barbiturates under proprietary names, e.g., "amidophen," "amytal compound," "cibalgin," "corosedine," "optalidon," "somnosal," "veramon," "veropyron" (but "allonal" and "taumasthman" no longer contain amidopyrine); secondly, phenylbutazone, sometimes the only drug which renders existence tolerable for the arthritic; thirdly, antithyroid drugs, especially the thiouracils; and, lastly, the anticonvulsants troxidine and methoin. Of course, occasional cases occur with almost any synthetic drug, including antihistamines and sulphonamides.

The best way to prevent agranulocytosis is to avoid prescribing drugs which cause it; the analgesics containing a barbiturate with aspirin or with phenazone or a derivative can often replace an amidopyrine mixture, especially if used from the beginning, because many patients become reluctant to change from a proved friend. However, there will still remain a few people who may need the more

dangerous amidopyrine, many who will need phenylbutazone, and some who must take an antithyroid or anticonvulsant drug if they are not to become complete invalids. Such patients should be warned of the risks associated with their treatment, and told that they must report to their doctor at once if they develop a sore throat or fever; this should be the signal for an immediate leucocyte count. Most authorities doubt whether routine blood counts are worth the trouble, although Holliday[3] has produced evidence which suggests that they may reduce the mortality. In addition, it is wise to make sure that any of these drugs should be dispensed in a container bearing its own name, lest the patient develops agranulocytosis far from home.

Once agranulocytosis has developed, it is essential to stop the drug at once, and any other drugs which might be involved, including all antituberculous drugs. The object of treatment is to prevent infection for the six or seven days until the bone marrow recovers, and this is usually done by giving penicillin. However, this might seem to invite invasion by penicillin-resistant staphylococci, so that nowadays a triple sulphonamide may be preferred. The patient should, if possible, be barrier-nursed in a cubicle fitted with ultra-violet sterilizing lamps. It is claimed that corticotrophin speeds up bone-marrow recovery.[4] Blood transfusion may help in severe anaemia. The prognosis, of course, depends entirely on the speed with which the condition is recognized and administration of the offending drug discontinued.

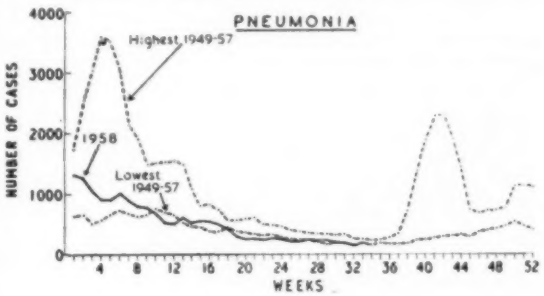

REFERENCES

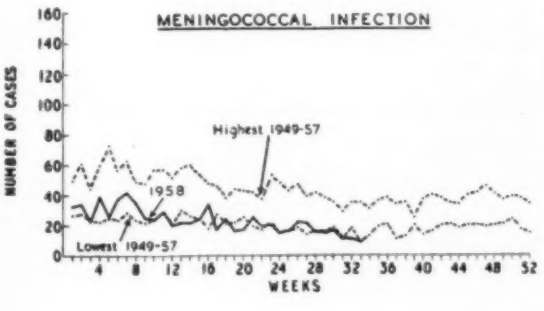
1 Discombe, G., *Brit. med. J.*, 1952, **1**, 1270.
2 Moeschlin, S., and Wagner, K., *Acta haematol. (Basel)*, 1952, **8**, 29.
3 Holliday, T. D. S., *Lancet*, 1951, **1**, 265.
4 Hart, F. D., Wraith, D. G., and Mansell, E. J. B., *Brit. med. J.*, 1952, **1**, 1273.

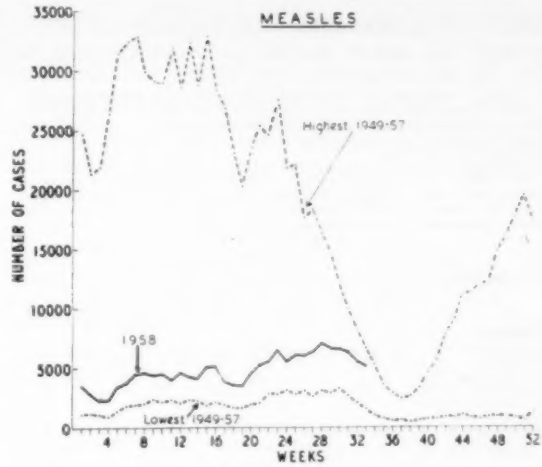

# Vital Statistics

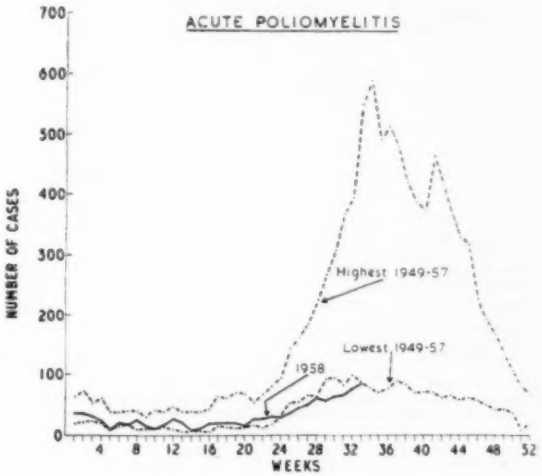
### Graphs of Infectious Diseases

The graphs below show the uncorrected numbers of cases of certain diseases notified weekly in England and Wales. Highest and lowest figures reported in each week during the years 1949–57 are shown thus - - - - - -, the figures for 1958 thus ————. Except for the curves showing notifications in 1958, the graphs were prepared at the Department of Medical Statistics and Epidemiology, London School of Hygiene and Tropical Medicine.




### Week Ending August 23

The largest fluctuations in the number of notifications of infectious diseases in England and Wales during the week ending August 23 were a decrease of 1,306 for measles, from 5,102 to 3,796, 61 for food-poisoning, from 287 to 226; 47 for scarlet fever, from 373 to 326; 32 for acute pneumonia, from 183 to 151; and an increase of 57 for whooping-cough, from 713 to 770; and 46 for dysentery, from 338 to 384. The largest falls in the incidence of measles were 150 in Lancashire from 615 to 465, 150 in Middlesex from 341 to 191, 78 in Cornwall from 130 to 52, and 62 in Hampshire from 146 to 84. Only small fluctuations were recorded in the local trends of scarlet fever and whooping-cough. Only two cases of diphtheria were notified—the same number as in the preceding week.

The notifications of acute poliomyelitis numbered 77, and there were 15 fewer paralytic and 6 more non-paralytic cases than in the preceding week. The largest returns were Yorkshire West Riding 20 (Leeds C.B. 5, Huddersfield C.B. 2, Hemsworth R.D. 2), Lancashire 8 (Burnley C.B. 2, Manchester C.B. 2), and Devonshire 5 (Plymouth C.B. 5). After falling for 6 consecutive weeks the number of notifications of dysentery rose slightly. The chief centres of infection were Yorkshire West Riding 78 (Thorne R.D. 17, Leeds C.B. 15), Lancashire 60 (Liverpool C.B. 24), London 55 (Islington 11, St. Pancras 10), and Gloucestershire 30 (Bristol C.B. 30).

## INFECTIOUS DISEASES AND VITAL STATISTICS

Summary for British Isles for week ending **August 16** (No. 33) and corresponding week 1957.

Figures of *cases* are for the countries shown and London administrative county. Figures of *deaths* and *births* are for the whole of England and Wales (London included), London administrative county, the 17 principal towns in Scotland, the 10 principal towns in Northern Ireland, and the 14 principal towns in Eire.

A blank space denotes disease not notifiable or no return available.

The table is based on information supplied by the Registrars-General of England and Wales, Scotland, N. Ireland, and Eire, the Ministry of Health and Local Government of N. Ireland, and the Department of Health of Eire.

| CASES | 1958 | | | | | 1957 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Eng. & Wales | Lond. | Scot. | N. Ire. | Eire | Eng. & Wales | Lond. | Scot. | N. Ire. | Eire |
| Diphtheria .. | 2 | 1 | 0 | 0 | | 1 | 0 | 1 | 0 | 1 |
| Dysentery .. .. | 338 | 54 | 138 | 16 | 3 | 238 | 25 | 142 | 2 | 7 |
| Encephalitis, acute | 6 | 2 | | 1 | | 9 | 0 | | 1 | |
| Enteric fever: | | | | | | | | | | |
| Typhoid .. | 4 | 0 | 1 | 0 | | 1 | 0 | 0 | 0 | |
| Paratyphoid .. | 5 | 0 | 1(B) | 0 | 2(B) | 15 | 1 | 4 | 0 | |
| Food-poisoning .. | 287 | 28 | 5 | 2 | | 387 | 33 | 9 | 0 | |
| Infective enteritis or diarrhoea under 2 years .. .. | | | | 9 | 22 | | | | 7 | 36 |
| Measles* .. .. | 5,102 | 283 | 11 | 18 | 17 | 6,620 | 148 | 27 | 39 | 34 |
| Meningococcal infection .. .. | 9 | 1 | 8 | 0 | 1 | 20 | 2 | 7 | 2 | 1 |
| Ophthalmia neonatorum .. .. | 16 | 1 | 8 | 0 | | 37 | 5 | 7 | 0 | |
| Pneumonia† .. | 183 | 12 | 98 | 3 | 1 | 223 | 15 | 95 | 0 | |
| Poliomyelitis, acute: | | | | | | | | | | |
| Paralytic .. | 57 | 3 | 23 | 1 | 15 | 176 | 13 | 3 | 22 | 7 |
| Non-paralytic .. | 29 | 2 | | | | 191 | 15 | | | |
| Puerperal fever§ .. | 237 | 30 | 13 | 1 | | 233 | 38 | 3 | 0 | |
| Scarlet fever .. | 373 | 30 | 36 | 11 | 10 | 278 | 20 | 34 | 12 | 12 |
| Tuberculosis: | | | | | | | | | | |
| Respiratory .. | 415 | 54 | 67 | 18 | | 507 | 52 | 86 | 11 | |
| Non-respiratory | 75 | 9 | 13 | 6 | | 89 | 9 | 14 | 2 | |
| Whooping-cough.. | 713 | 37 | 82 | 47 | 14 | 1,205 | 55 | 55 | 2 | 29 |

| DEATHS | 1958 | | | | | 1957 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Eng. & Wales | Lond. | Scot. | N. Ire. | Eire | Eng. & Wales | Lond. | Scot. | N. Ire. | Eire |
| Diphtheria .. | 0 | 0 | 0 | 0 | 0 | No comparable figures available. | 0 | 0 | 0 | 0 |
| Dysentery .. .. | 1 | 0 | | 0 | | | 0 | | 0 | 0 |
| Encephalitis, acute | | 0 | | | 0 | | 0 | | | |
| Enteric fever .. | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 |
| Infective enteritis or diarrhoea under 2 years .. .. | 8 | 0 | 1 | 1 | 0 | | 0 | 0 | 0 | 1 |
| Influenza .. .. | 2 | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 |
| Measles .. .. | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| Meningococcal infection .. .. | | 0 | 0 | | | | 0 | 0 | | |
| Pneumonia .. | 303 | 19 | 11 | 9 | | | 18 | 14 | 8 | 2 |
| Poliomyelitis, acute | 3 | 0 | | 0 | 0 | | 2 | 0 | 0 | 0 |
| Scarlet fever .. | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| Tuberculosis: | | | | | | | | | | |
| Respiratory .. | 60 | 8 | 9 | 0 | 2 | | 7 | 6 | 1 | 2 |
| Non-respiratory | | 0 | 0 | 1 | 1 | | 2 | 1 | 0 | 1 |
| Whooping-cough.. | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 |
| Deaths 0–1 year .. | 268 | 19 | 25 | 6 | 16 | | 29 | 27 | 3 | 11 |
| Deaths (excluding stillbirths) .. | 8,187 | 649 | 514 | 88 | 138 | | 625 | 523 | 99 | 147 |
| LIVE BIRTHS .. | 14,009 | 1125 | 926 | 209 | 381 | | 1156 | 957 | 224 | 383 |
| STILLBIRTHS.. | 298 | 18 | 23 | | | | 17 | 33 | | |

* Measles not notifiable in Scotland, whence returns are approximate.
† Includes primary and influenzal pneumonia.
§ Includes puerperal pyrexia.

# Medical News

**"British National Formulary."**—A First Amendment (1958) to the *British National Formulary, 1957*, necessitated by changes in the *British Pharmacopoeia, 1958*, which became official on September 1, is now available. The amendments are printed on one side of gummed paper for ready insertion into the *Formulary*. Copies of the First Amendment (price 8d., postage 2d.) are available from the publishing department of the British Medical Association, the Pharmaceutical Press (17, Bloomsbury Square, London, W.C.1), or through booksellers.

**Regius Chair at Aberdeen.**—Dr. J. L. MALCOLM, of the division of physiology and pharmacology at the National Institute for Medical Research, Mill Hill, has been appointed to the regius chair of physiology at Aberdeen University in succession to Professor E. W. H. CRUICKSHANK. Dr. Malcolm is a New Zealander. He graduated B.Med.Sci. at Otago University in 1935 and M.B., Ch.B. three years later. After holding lectureships at Otago in bacteriology and experimental physiology, he came to London in 1948 as an exchange lecturer to St. Thomas's. In 1949, after some months at the N.I.M.R., Dr. Malcolm was appointed to a readership at St. Mary's, a post he held until 1952, when he went as visiting professor in physiology to the New York State University College of Medicine. On his return he joined the staff of the Medical Research Council at Mill Hill, where he has lately been studying the central effects of 5-hydroxytryptamine.

**Chairs at London Medical Schools.**—London University announces the following appointments: Dr. R. C. CURRAN, senior lecturer in pathology at Sheffield University, to the university chair of pathology tenable at St. Thomas's Hospital Medical School; and Dr. M. DE BURGH DALY, Locke research fellow of the Royal Society at University College, London, to the university chair of physiology at St. Bartholomew's Hospital Medical College. Dr. Curran graduated in medicine at Glasgow in 1943, proceeding M.D. with honours and the Bellahouston Medal in 1956. Before going to Sheffield he was lecturer in pathology at Glasgow. His research publications have concerned collagen and other connective tissue elements. Dr. de Burgh Daly graduated in medicine at Cambridge in 1947, subsequently holding appointments as a lecturer in physiology at University College, London, and as a Rockefeller travelling fellow in medicine in the United States. He has carried out research on the innervation of the lungs.

**Priory Church of St. John Clerkenwell.**—On October 17 the ARCHBISHOP OF CANTERBURY will re-dedicate the church of St. John Clerkenwell, now the Grand Priory church of the Order of St. John. The DUKE OF GLOUCESTER, Grand Prior of the Order, will unveil a tablet to the memory of those members of the Order, Association, and Brigade who gave their lives in the two world wars. The church is on the original site of the first Priory church, built in 1144, of which only the crypt remains, and this has been embodied in the new design. In the seventeenth century the crypt was for a time the Marquess of Aylesbury's wine cellar. During its life the church has been destroyed or damaged three times, most recently in 1941 by enemy action. Special furnishings for the new church have been subscribed for by St. John members all over the Commonwealth, notably 400 chairs by members of the St. John Ambulance Brigade.

**Research Director Wanted.**—At p. 78 is advertised a vacancy for a director of medical research in the combined territory of Papua and New Guinea. This results from a recent decision of the Health Department to establish a division of medical research, and the official appointed will be responsible for its initiation and development. The territory comprises half the mainland of New Guinea and all the islands to the north and north-east, with a population

totalling one and three-quarter millions. Port Moresby General Hospital, a modern fully-staffed and equipped 370-bed hospital, will be the centre for research in the territory. The most important diseases in the area are malaria and tuberculosis. Infant and child mortality is a problem of particular concern, and medical anthropology and demography are among the many other broad and relatively untouched fields for investigation.

**Doctors' Hobbies.**—The Doctors' Hobbies Exhibition sponsored by Benger Laboratories, Ltd., is being repeated this year. It will be held in the Great Hall at B.M.A. House from November 10 to 14. This time the number of classes has been increased to cover so far as possible the extremely varied spare-time activities of the medical profession. There will be a silver cup for the winner of each class, and three cheques of £75, £50, and £25 for the three outstanding award winners. Entry forms are obtainable from the public relations officer, Benger Laboratories, Ltd., Holmes Chapel, Cheshire. Entries close on September 12.

**Inquest on Christmas Island Soldier.**—At an inquest at Swansea on August 27 a verdict of death from natural causes was returned in the case of ex-Sapper W. B. Morris (*Manchester Guardian*, August 28). Morris, who was on Christmas Island at the time of a nuclear explosion last December, died on June 14 of acute lymphatic leukaemia. At the inquest Morris's commanding officer stated that Morris had no contact with radioactive material and that at the time of the explosion he was in a safety zone. Lieutenant-Colonel R. M. Johnstone, R.A.M.C., said that two years was, so far as he knew, the shortest period in which leukaemia had first shown itself after a nuclear explosion. A report from Harwell stated that the amount of strontium-90 in Morris's femur was 0.15 unit (a normal value). We understand that the Swansea Branch of the British Legion, which is conducting a pension appeal in this case, is making a further application to the Ministry of Pensions in the light of the evidence at the inquest, and that if that is rejected the Branch intends to carry the case to the Pensions Appeal Tribunal.

**Another Christmas Island Inquest.**—The coroner for S.E. Hampshire adjourned the inquest on the late Lieutenant D. C. Franklin, R.N., on September 1 in order to allow examination of his bones for evidence of abnormal radioactivity (*The Times*, September 2). Lieutenant Franklin served in H.M.S. *Warrior* during the nuclear explosions at Christmas Island last year. His death, which occurred last week, is reported to have followed aplastic anaemia.

**East African Medical School.**—Earlier this year (*Journal*, February 1, p. 277) we drew attention to a report recommending the setting up of a medical school at the University College of Rhodesia and Nyasaland in Salisbury. The full report of the planning committee which recommended this step has now been printed as a supplement to the June issue of the *Central African Journal of Medicine*. The committee, appointed by the University College, was under the chairmanship of Mr. L. FARRER-BROWN, director of the Nuffield Foundation. The committee describes its report as a "first report."

**Overseas Students in Britain.**—10,889 overseas students enrolled for full-time study or research in United Kingdom universities at the start of the last academic year (1957–8), according to the Association of Universities of the British Commonwealth. This was an increase of 456 on the previous year. Nearly 7,000 of them came from other parts of the Commonwealth. Of the total, 1,812 came to study medicine or a related science, 718 being postgraduate students. London University took by far the largest number of overseas students—4,577 compared with Oxford's 894, Cambridge's 812, Edinburgh's 531, and Manchester's 428, the four universities with the next highest totals. The medical schools in London took a very appreciable share: Charing Cross 12, Guy's 88, King's College Hospital 17, The London 29, Middlesex 39, Royal Free 43, Bart's 58, George's 17, Mary's 39, Thomas's 30, U.C.H. 18, and the Westminster 24. The British Postgraduate Medical Federation accounted for 584 and the London School of Hygiene and Tropical Medicine for 126.

**Bagdad University.**—Professor J. H. BIGGART, professor of pathology and dean of the faculty of medicine at Queen's University, Belfast, has been notified that his appointment as one of the three founding members of Bagdad University has been cancelled (*The Times*, September 2).

## COMING EVENTS

**"The Catarrhal Child."**—N.A.P.T. symposium at the Royal Faculty of Physicians and Surgeons, Glasgow, October 1, 3.30 to 6.30 p.m. Tickets, 10s., from the N.A.P.T. Scottish Branch, 65, Castle Street, Edinburgh, 2.

**St. George's Hospital Medical School.**—Sir CLAUDE FRANKAU will give the inaugural address at 3 p.m. on October 3 at the School.

**"Space Medicine."**—Symposium organized by the British Interplanetary Society with the co-operation of the Royal Air Force Institute of Aviation Medicine, October 16 and 17, at B.M.A. House. Details from the Secretary, British Interplanetary Society, 12, Bessborough Gardens, London, S.W.1.

**St. Thomas's Hospital.**—Old students' dinner, October 31, at the Savoy Hotel, at 7 p.m. for 7.30 p.m. Tickets (2 gns.) from Dr. A. P. C. BACON, St Thomas's Hospital Medical School, London, S.E.1.

**Edinburgh Course in Endocrinology.**—Professor D. M. DUNLOP is arranging a course to be held at the Royal Infirmary, Edinburgh, on March 16–20, 1959, by members of the departments of therapeutics and of medicine in the University of Edinburgh and by visiting consultants. It is planned for physicians or surgeons who already hold a higher diploma. Class limited to twenty students; fee, £15. Applications should be received before February 16, 1959, by the Director of Studies, Edinburgh Postgraduate Board for Medicine, Surgeons' Hall, Edinburgh, 8.

## SOCIETIES AND LECTURES

A fee is charged or a ticket is required for attending lectures marked ●. Application should be made first to the institution concerned.

**Friday, September 12**

INSTITUTE OF DISEASES OF THE CHEST.—5 p.m., Dr. E. H. Hudson: clinical demonstration.

## BIRTHS, MARRIAGES, AND DEATHS

### BIRTHS

**Penney.**—On August 26, 1958, at Bishop's Castle, Salop, to Belinda (formerly Rudd), wife of Dr. G. St. John Penney, a brother for Adrian.

**Reed.**—On June 24, 1958, in Bali, Indonesia, to Elisabeth (formerly Newnham), and Spencer Reed, M.B., B.Chir., D.T.M.&H., a sister for Anthony—Susan Alethea.

**Steele.**—On August 29, 1958, at the General Hospital, Kuching, Sarawak, to Eileen (formerly Selby-Brown), and Bill Steele, Education Department, Kuching, a sister for Jonathan—Jennifer Mary.

**Whelan.**—On August 20, 1958, to Noreen and Ranger M. Whelan, F.F.A. R.C.S., of "Red House Cottage," Totteridge, London, N., a daughter—Ann Pengelly, a sister for Timothy on his birthday.

### MARRIAGES

**Mackay-Lockwood.**—On August 23, 1958, Lieutenant-Colonel H. G. Mackay, O.B.E., *M.C.*, to Barbara R. Lockwood, South Kinangop, Kenya Colony.

### DEATHS

**Chambers.**—On August 12, 1958, at Saddlers House, Alfriston, Sussex, James Ramsden Chambers, M.B., B.Chir., late of Northwood Hills, Middx.

**Heriot.**—In August, 1958, Christine Margaret Heriot (formerly Stacey), M.B., B.S., M.R.C.O.G.

**Kearns.**—On August 16, 1958, at 228, Goldhawk Road, London, W., John Louis Kearns, M.B., B.Ch.

**Mills.**—On August 16, 1958, at Southwold Cottage Hospital, Suffolk, Charles William Mills, L.M.S.S.A., aged 56.

**Pailthorpe.**—On August 12, 1958, Frederic Gerald Pailthorpe, M.B., Ch.B., late of Norbury, London, S.W.

**Robins.**—On August 10, 1958, at Folkestone, Kent, John Norman Robins, M.D., aged 81.

**Roderick.**—On August 29, 1958, at Addenbrooke's Hospital, Cambridge, Henry Buckley Roderick, O.B.E., T.D., M.D., M.Chir., F.R.C.S., D.P.H., of Newnham Cottage, Queens Road, Cambridge, aged 84.

**Waterhouse.**—On September 1, 1958, at The Royal United Hospital, Bath, Somerset, Rupert Waterhouse, M.D., F.R.C.P., of 12, Marlborough Buildings, Bath, aged 85.

# Any Questions ?

*We publish below a selection of those questions and answers which seem of general interest. It is regretted that it is not possible to supply answers to all questions submitted.*

### Age and Severity of Poliomyelitis

**Q.**—*Is poliomyelitis infection likely to be "more harmless" in infants and young children than in older children and adults?*

**A.**—The outcome of an infection by the virus depends upon the pre-existence of antibodies in the serum which will prevent viraemia and involvement of the C.N.S. and also on the susceptibility of the neurones to attack. The levels of antibodies in the serum increase rapidly in early childhood, except when exposure to the virus has been prevented by good sanitation. Nevertheless, even in civilized communities most children of school age possess antibodies, so that the likelihood of poliomyelitis infection involving the C.N.S. diminishes steadily with age. The mortality rate from paralytic disease increases, however, with age, probably because adult neurones are more readily damaged than are those of infants or children. Serious residual effects or death are therefore more often seen when the paralytic disease occurs in an older child or an adult. In this sense therefore polio is more harmless in the young infant than in the older child or adult.

### Prednisolone for Infantile Eczema

**Q.**—*Is there any risk in using oral prednisolone in the treatment of acute exacerbations of infantile flexural eczema in a girl aged 11?*

**A.**—All steroid hormonal therapy carries risks, and their use is undesirable especially in children approaching puberty. This is particularly so in a chronic affection like flexural eczema, which can generally be brought under control by other means. The use of such hormonal therapy may be justified occasionally to control severe exacerbations. In the severe type of Besnier's prurigo with xeroderma, chronic eczema, asthma, and sometimes juvenile cataract formation, the incurable condition may make life so distressing and relief from moderate dosage of steroid hormones may be so marked that their use on a long-term basis may even be justified, but these are exceptional circumstances.

### Encephalitis and Concurrent Vaccinations

**Q.**—*How real is the danger of encephalitis when primary smallpox and yellow fever vaccinations are carried out at the same time? Is there still a danger in concurrent vaccination in an adult who had primary smallpox vaccination in childhood but has not been revaccinated since?*

**A.**—In infants aged under 9 months a small number of cases of a mild encephalitic syndrome—fever, drowsiness, and muscular twitchings—have been reported about ten days after yellow fever vaccination. As primary smallpox vaccination also carries a danger of encephalitis, there is presumably a greater risk of neurological complications when both viruses are inoculated concurrently. It is deemed safer, therefore, in infants to leave an interval of at least 21 days between the two vaccinations whichever is done first; but yellow fever vaccination should in fact be postponed, wherever practicable, till the age of 9 or even 12 months.

In the case of older children and adults, the danger of encephalitis after yellow fever vaccine is negligible, but the danger of encephalitis after primary smallpox vaccination remains. When both vaccinations have to be done, the Ministry of Health recommends that yellow fever vaccination should precede smallpox vaccination by an interval of not less than four days. There are no known published statistics giving the degree of risk if this wise precaution is not followed and both vaccinations are done at the same session.

The risk of encephalitis from concurrent vaccination is less still in the case of an adult who has had primary smallpox vaccination in childhood. Nevertheless, it is better to play for safety and to give yellow fever vaccine first and the smallpox vaccine four days later.

### Carcinogens in Fertilizers

**Q.**—*Is there a danger of fertilizers and insecticides making crops and fruit carcinogenic to the consumer?*

**A.**—No material generally recognized to be carcinogenic is used in agriculture under conditions in which a residue might persist in the crop as it is consumed. When the question was raised in the specific case of a weedkiller—maleic hydrazide—an elaborate series of tests showed the supposition that it might be a carcinogen to be groundless.[1] When there are no special reasons for apprehension about a substance, such detailed investigations are not carried out, but routine toxicity tests are done, including the feeding of animals with the substance for a period of one to two years. This should give a reasonable chance for detecting any carcinogenic properties.

REFERENCE

1 Barnes, J. M., *et al.*, *Nature (Lond.)*, 1957, **180**, 62.

### Salt-losing Nephritis

**Q.**—*Is sodium chloride indicated in salt-losing nephritis in the presence of considerable oedema, and should diuretics be used?*

**A.**—If the patient has developed oedema there must be retention of salt and water by the kidneys, and if, therefore, salt-losing nephritis was once present it is no longer. The development of oedema in a patient with salt-losing nephritis is so unusual as to make one wonder whether the initial diagnosis was correct. None the less, it is theoretically possible for sodium retention to occur, even though the tubular transport of sodium is severely impaired, if the glomerular filtration rate becomes markedly depressed. Diuretics may be used to eliminate the oedema but should be used cautiously if there is any elevation of the blood urea.

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**Correction.**—In Dr. A. C. E. BREACH'S note describing an adjustable bed (*Journal*, August 23, p. 506), one of the advantages claimed for the bed was that "the orthopaedic patient can adjust his position, day or night, to give maximum comfort and can vary it at will." This should have referred to the *orthopnoeic*, not the orthopaedic, patient.

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